

J. J. Falmer

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J. ROSS ROBERTSON

Ornithological Collection

TORONTO:

1919

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THIS ORNITHOLOGICAL COLLECTION
COMPRISES WATER COLOURS BY WIL-
LIAM POPE, OF PORT RYERSE; PLATES
IN COLOUR BY LOUIS AGASSIZ FUER-
TES, ACCOMPLISHED BIRD ARTIST,
AND OTHER PICTURES ILLUSTRATIVE
OF BIRD LIFE IN CANADA.

THE POPE COLLECTION WAS FOR-
MALLY OPENED 29TH JANUARY, 1917,
THE OTHER PLATES BEING ADDED
LATER.

143837

NOTE BY MR. GEORGE H. LOCKE, CHIEF LIBRARIAN
OF THE PUBLIC LIBRARY.

After years of prosperity and wastefulness our country became aroused—and even then only partially—to the necessity for conservation of its resources. Then Conservation Commissions were appointed and the country settled back to the customary attitude of complacency that the subject had been recognized and settled. They were material needs that moved our people to this consideration, and these seem to be the only impelling forces which can move governments. It is left to private individuals to conserve and make available and useful the resources of our country which make for enjoyment, happiness and larger education. In Toronto this is especially true, and perhaps one of the most noteworthy illustrations is the Collection of Historical Pictures which show the evolution of our Dominion. These, presented by Mr. J. Ross Robertson to the people of Canada through the Public Library Board of Toronto, have awakened interest in the early history of our country and given genuine pleasure to thousands of people. It is now nearly five years since this Historical Collection was opened, and during that time it has been visited by over 50,000 people.

The interest shown by the boys and girls in this historical work was so pleasing to Mr. Robertson that when he had the opportunity of purchasing a wonderful Collection of Illustrations of Early Bird Life of our Province he undertook it, partly on account of its historical interest, which is ever present in his mind, and partly because he believed that a sympathetic acquaintance with birds and their habits would interest boys and girls and lead to the preservation of this interesting and beautiful part of our life, which has been too often injured and sometimes entirely destroyed by a thoughtless and even cruel mankind. We cannot do much with adults, but we can develop in boys and girls a sympathetic attitude towards the birds, and in no way better than with an historical background.

This is, therefore, a decided step towards the Conservation of the Bird Life of our Province, and it is intended to be a nucleus of a Provincial Ornithological Collection housed in the great public building which is the community centre, as far as there can be such a thing in a large city.

GEORGE H. LOCKE.

Public Library, Jan. 29th, 1917.

OPINIONS OF DISTINGUISHED ORNITHOLOGISTS.

REGARDING THE POPE DRAWINGS.

Mr. C. W. Nash, the well-informed Biologist of the Provincial Museum of Ontario, who kindly prepared the inscriptions for these pictures, states that:

"The drawings of Canadian birds, made by Mr. Pope, and presented by Mr. J. Ross Robertson to the Public Library of the City of Toronto, will rank among the best work of this class ever done. The coloration of the plumage in most of them is remarkable for its accuracy and the attitude of the subject is in all cases natural and characteristic of the species delineated.

"Lovers of art and naturalists will find pleasure and profit in studying these pictures, which not only faithfully portray the birds themselves, but also sufficient of the natural habitat of each species to show where it may be expected to be found in life.

"The citizens of Toronto have every reason to be grateful to Mr. Robertson for the public spirit he has shown in purchasing and presenting to the city this beautiful collection of drawings."

Mr. James H. Fleming, of Toronto, a recognized and widely-known authority on ornithology, who has the most complete private collection in Canada, after carefully examining the work of Mr. Pope, writes:

"It has been my privilege to examine the Pope drawings, and where necessary to compare them with the bird or animal they represent, and I have been struck with the accuracy in drawing and coloring; in fact, they would have brought fame to the artist had they been published at the early date they were made. To the naturalist they serve as an invaluable record of the fauna of the Lake Erie region at a time when the country was still covered by its original forest. Not only are the birds and animals shown, but the backgrounds often have details that the botanist will find of interest. Toronto has reason to be grateful to Mr. J. Ross Robertson for the presentation of this unique collection of drawings."

WILLIAM POPE, 1811-1902.

Mr. William Pope was a very interesting man and a rather unique character. He was born in Maidstone, Kent, Eng.; educated there and at Sevenoaks, Kent. In 1834 he made his first voyage to America; travelled extensively in the States, remained for a time in western Ontario, and then returned to England. He again came to Canada in 1842. Several visits were made to the old land up to 1859, when Mr. Pope determined to settle permanently in Canada, and for more than forty years lived near Port Ryerse, Norfolk County. He took no active interest in public affairs, but remained a persistent student of nature. His work for the most part consists of a combination of pen and ink and water color, the pen being used chiefly to outline the detail in the plumage of the bird or hair of the animal. In addition to these drawings, which are rivalled only by nature, Mr. Pope wrote much that is of interest on the life and habits of his subjects. His portrait is in the collection.

CATALOGUE OF THE COLLECTION

NOTE.

Numbers in brackets are those of the Check List of the American Ornithologists' Union. Diphthongs are not indicated by the use of connected vowels in the scientific names, as in the Check List. Drawings 11, 18, 39, 50 (1) were done in England.

DIVING BIRDS—ORDER 1—PYGOPODES.

GREBES—Family Colymbidae.

Grebes are birds having a duck-like body, but with pointed bills. Their feet are unlike those of the ducks, each toe having its separate lobe, and having a broad, flat nail. Their wings are very small for the size of the body, making it impossible for them to rise in flight from the land. They rise from the water by running a few yards along the surface until they have secured sufficient headway to allow them to launch themselves into the air. On land they are very awkward and can only progress with difficulty. Together with the Loons, they are the most expert aquatic birds that we have, diving like a flash and swimming for an incredible distance under water.

1—(2) **HOLBOELL'S GREBE**—*Colymbus holboellii*—(Adult in Autumn)—This Grebe is 19 inches in length and can be distinguished by the white cheeks and throat and the reddish brown foreneck; a regular, but never a common, spring and autumn visitor to the waters of southern Ontario. They breed in the far north, placing their floating nests of decayed vegetation in the water in the midst of the marsh grass. They lay from three to six eggs of a dingy white color, stained by a thin, chalky deposit. Size of eggs 2.25 x 1.25. Made Oct. 20th, 1859. See 227.

2—(3) **HORNED GREBE**—*Colymbus auritus*—(Adult)—This species is one of the most beautiful of the Grebes, having buffy ear tufts, black cheeks and throat, and chestnut neck, breast and sides. They are abundant on the Great Lakes and all large bodies of water in spring and autumn, breeding in the large marshes. A few remain on the lakes of southern Ontario through the winter. Their nest is a floating mass of decayed matter, and their eggs white, stained to a dirty brown. Size of eggs 1.70 x 1.15. Made May 1st, 1846. See 227, 334.

3—(3) **HORNED GREBE**—*Colymbus auritus*—Hell Diver (Young)—Abundant on the Great Lakes in spring and autumn; breeding in the large marshes. A few remain in southern Ontario through the winter. Made in October, 1862.

4—(6) **PIED-BILLED GREBE**—*Podilymbus podiceps*—Hell Diver—(Young)—The Dabchick, as this bird is called, is the best-known species of the family. They make more substantial nests than other species by the addition of mud, which they bring up from the bottom of the pond. It is a common summer resident in marshes all over the Province of Ontario, breeding throughout its range. Arrives early in April, departs about the middle of October. The bird may also be known by the shape of its bill, which is higher than it is broad, and in the summer is white with a black band across the middle. The throat is also black. They lay from five to nine dull white eggs. Size 1.70 x 1.18. Made Nov. 12, 1862. See 227, 339.

LOONS—Family Gaviidae.

Loons may be likened to gigantic Grebes, from which they differ externally, chiefly in the full webbed foot, instead of the individual lobed toes of the Grebe and the more pointed spear-like bill. Their nests are placed near the margin of some inland lake. Like the Grebes, they have small wings and must first get their impetus from the water in order to rise, but they vie with them in diving, and disappear at a flash of a gun. The expression "Crazy as a Loon" is not a fanciful one, being formed from the early morning and evening antics of the bird, when two or more of them will race over the top of the water uttering their demoniacal laughter.

5—(11) **RED-THROATED LOON**—*Gavia stellata*—(Young)—A common spring and autumn visitor to the waters of Ontario, breeding in the far north and retiring southward as its haunts freeze up. It is the smallest of the Loon family, being 25 inches in length. In summer the back, head and neck are grey, the latter being striped with white. A large chestnut patch adorns the front of the lower part of the neck. In winter the back is spotted with white. They have two eggs of a greenish brown spotted with black. Size 2.00 x 1.75. Made in Nov., 1862. See 228.

LONG WINGED SWIMMERS—ORDER II.—LONGIPENNES.**GULLS AND TERNS—Family Laridae.**

Gulls are web-footed birds, having a slight hook to the end of the upper mandible. Their plumage is usually silver grey above and white below. They nest in large colonies on both fresh water inland and sea coast. They procure from the surface of the water their food, which consists mostly of dead fish and refuse matter. Terns are birds of similar plumage to the gulls, somewhat less robust, and their bills longer and sharply pointed.

6—(51) **HERRING GULL**—*Larus argentatus*—(Young)—The Herring Gull is twenty-four inches in length. It is a very common resident, frequenting the Great Lakes at all seasons, but most abundant in winter, and breeds regularly on many of the lakes and marshes of the interior. They lay three eggs of a greyish color, marked with brown, and, in rare cases, unspotted bluish-white eggs are found. Size 2.8 x 1.7. See 231.

7—(60) **BONAPARTE'S GULL**—*Larus philadelphia*—(Young)—A common spring and autumn visitor to the Great Lakes. Occasionally seen during the summer months, but the bulk go north and west of Ontario to breed. They nest in great numbers on the marshes of Manitoba. The nests, of sticks and grass, are placed on the higher parts of the marsh, and three or four eggs are laid during the latter part of June. Eggs are greyish to greenish brown, and are marked with dark brown and lilac. Size 1.90 x 1.30.

8—(60) **BONAPARTE'S GULL**—*Larus philadelphia*—(Young)—Made Nov. 10, 1863. See 232, 346.

9—(77) **BLACK TERN**—*Hydrochelidon nigra surinamensis*—(Adult)—This tern is common in summer in some of the large marshes of Ontario, but is not generally distributed; breeds where it occurs. It is ten inches in length; a dainty, graceful bird; very active. They capture many insects in the air; breed in large colonies, making a nest of decayed reeds and grasses, or often laying their eggs upon rafts of decayed vegetation which are floating on the water. They lay three eggs of a brownish or greenish color, very heavily blotched with blackish brown. Size of eggs 1.35 x .95. Made June 13, 1845. See 234, 342.

TOTIPALMATE SWIMMERS—ORDER IV.—STEGANOPODES.
CORMORANTS—Family Phalacrocoracidae.

Cormorants are found in nearly all quarters of the globe. They feed upon fish which they catch by pursuing under water. Most of the Cormorants have green eyes.

10—(120) **DOUBLE-CRESTED CORMORANT—Phalacrocorax auritus auritus—(Young)**—A regular but not a common spring and autumn visitor to our lakes; probably breeds about the northern waters of the lakes of Ontario, as it does in Manitoba, Saskatchewan and Alberta. In the interior they place their nests on the ground or occasionally on low trees or islands in the lakes. They breed in large colonies, making the nests of stick and weeds, and lay three or four eggs, greenish white. Size 2.30 x 1.40. Made Nov. 20, 1865. See 235, 344.

LAMELLIROSTRAL SWIMMERS—ORDER V.—ANSERES.
DUCKS, GEESE AND SWANS—Family Anatidae.

Birds of this family are of greatly varying sizes, but all have webbed feet and, generally, the bill is broader than high, and is serrated on the edges or provided with gutters to act as a strainer in assisting the birds to gather their food.

11—**SMEW—Mergus albellus—(Female)**—A European species which has been taken occasionally in American waters. This species is almost exclusively a fish-eating bird therefore its flesh is not edible.

12—(132) **MALLARD—Anas platyrhynchos—(Male)**—The Mallard is regarded as one of the most esteemed table birds. They feed on vegetable matter, mollusks and marine insects which they reach by tipping in shallow water. It is a common summer resident of the western part of Ontario, being abundant in the east. Arrives as soon as the marshes open and retires southward as the shallow waters become frozen over; breeds throughout its range in Canada. See 13, 238, 344.

13—(132) **MALLARD—Anas platyrhynchos—(Female)**—It is a common summer resident of the western part of Ontario, less abundant in the east. Arrives as soon as the marshes open and retires southward as the shallow waters become frozen over; breeds throughout its range in Canada. They nest in close proximity to ponds or lakes, placing their nests of grasses and feathers in the tall grass. In May and June they lay from six to ten eggs of a pale greenish color. Size 2.25 x 1.25. Made Nov. 30, 1859. See 12, 238, 349.

14—(133) **BLACK DUCK—Anas rubripes—(Male)**—A common summer resident, breeding in all suitable places in Ontario. Made Nov. 30, 1859. See 15, 238, 356.

15—(133) **BLACK DUCK—Anas rubripes—(Female)**—A common summer resident, breeding in all suitable places in Ontario. Their nests are placed on the ground in marshes, swamps or fields bordering on a pond, lake or along the sea coast. In the latter case their nest is under an overhanging rock. It is made of weeds, grass and moss, lined with feathers and down. They lay from six to twelve eggs during May and June, buff or greenish buff in color. Size 2.30 x 1.70. Made Nov. 30, 1859. See 14, 238, 356.

16—(135) **GADWALL—Chauelasmus streperus—(Male)**—A very rare summer resident of Ontario; breeds commonly in Manitoba and provinces westward. The males of these birds may be identified by the white speculum and the chestnut wing coverts. Made in October, 1864. See 17, 238.

17—(135)—**GADWALL**—*Chaulelasmus streperus*—(Female)—A rare summer resident; breeds commonly in Manitoba. Gadwalls nest on the ground among the reeds and marshes. They make little or no nest, but line the cavity with down from their breasts. They lay from seven to twelve eggs of a creamy buff color. Size 2.10 x 1.60. Made in October, 1869.

18—(136) **WIDGEON**—*Mareca penelope*—(Female)—A European duck, which has occasionally been taken in America. It is similar in build and plumage to the following species, save that the whole head, with the exception of the white crown, is chestnut. They lay from six to ten light buff-colored eggs. Size 2.20 x 1.50. See 239.

19—(137) **BALDPATE**—**AMERICAN WIDGEON**—*Mareca americana*—(Male)—The Baldpate (so called because of the white crown) is regarded as a great table delicacy. The male birds are handsomely marked, having a white crown, wing coverts and under parts, and a broad green stripe back of the eye. It is a fairly common migrant and an occasional summer resident in Lakes Erie and Ontario. Arrives in April, and leaves with the first sharp frost. They build their nests in the rushes, making them of reeds and grass, and lining them with feathers. Made in October, 1863. See 239, 363.

20—(139) **GREEN-WINGED TEAL**—*Nettion carolinense*—(Male and female)—Common in the spring and autumn migrations; breeding in the north from Labrador to the Pacific coast. Arrives as soon as the marshes are open, and leaves about the end of October. These birds can be identified by the reddish brown head and neck, with a large green patch behind each ear; although fourteen inches in length, they are our smallest representative of the Duck family. They are eagerly sought by sportsmen, both because of their beauty and the excellence of their flesh. Eggs buffy, four to ten in number. Size 1.85 x 1.25. See 239, 350.

21—(140) **BLUE-WINGED TEAL**—*Querquedula discors*—(Male and female)—Common summer resident; breeding in all suitable places throughout the Province of Ontario. Arrives in April, and leaves about the end of September. It is another small species known by the blue wing coverts and the white crescent in front of eye. They place their nest of grass and weeds on the ground in meadows near water, the same as the preceding species. Eggs buffy white, six to twelve in number. Size 1.90 x 1.30. Made in 1864. See 240.

22—(142)—**SHOVELLER DUCK**—*Spatula clypeata*—(Female)—A regular, but uncommon, summer resident of Ontario; breeds throughout its range. Very abundant in the prairie sloughs of Manitoba. This duck is twenty inches in length, has a green head and speculum, blue wing coverts and chestnut belly. The bill is long and broad at the tip. It makes its nest on the ground in marshy places, of grass, weeds and feathers. Six to ten eggs of greenish or leaden grey color. Size 2.10 x 1.50. Made in October, 1863. See 240, 564.

23—(143) **PINTAIL DUCK**—*Dafila acuta*—(Male)—A common spring and autumn visitor to southern Ontario; occasionally breeding in the marshes about Lake Erie. Arrives as soon as the marshes open, and leaves when they freeze. Also known as the Sprig-tail, is about thirty inches long, its length depending upon the tail feathers, the central one of which is long and pointed. Made April 20, 1847. See 24, 241.

24—(143)—**PINTAIL DUCK**—*Dafila acuta*—(Female)—A common spring and autumn visitor of southern Ontario; occasionally breeding in the marshes about Lake Erie. They nest near the water, laying from six to twelve eggs of dull olive color. Size 2.20 x 1.50. Made in April, 1847.

25—(144)—**WOOD DUCK**—*Aix sponsa*—(Male and female)—Formerly an abundant summer resident; breeding everywhere throughout the Province of Ontario. It is still fairly common, but its numbers are decreasing rapidly. Arrives as soon as the ice is out of the marshes; departs about the end of September. Bridal Duck is a name often given to this the most beautiful of all ducks. They build their nests in hollow trees and stumps, often at quite a distance from the water. When the young are a few days old they scramble or flutter down the tree trunk to the ground and are led to the water. Eggs are buff color, number eight to fifteen. Size 2.00 x 1.5. See 246, 252.

26—(146) **REDHEAD DUCK**—*Marila americana*—(Male and female)—A common spring and autumn migrant. They breed from the Great Lakes northward, and abundantly in Manitoba and the Prairie Provinces. In some seasons a considerable number spend the winter on Lakes Erie and Ontario. A bird commonly seen in the markets. The nests are placed on the ground in marshes or sloughs, and are made of grasses and lined with feathers. Eggs from six to fourteen in number. Buffy white color. Size 2.40 x 1.70. Made in October, 1862. See 242, 358.

27—(147) **CANVAS-BACK DUCK**—*Marila valisneria*—(Male)—A regular, but not generally a common, spring and autumn migrant in Ontario. It is a noted table bird, especially in the South, where it feeds on wild celery, and can be distinguished from the Redhead by its darker head, lighter back and sloping bill. Made Oct. 20, 1862. See 28, 242, 359.

28—(147) **CANVAS-BACK DUCK**—*Marila valisneria*—(Female)—A regular, but not generally a common, spring and autumn migrant in Ontario. They lay from six to ten eggs of a darker shade than the Redheads. Size 2.40 x 1.70. Made Oct. 20, 1862.

29—(148) **SCAUP DUCK**—*Marila marila*—(Male and female)—The great majority of these birds are spring and autumn visitors to southern Ontario, but they do not go very far north to breed, and a good many spend the winter in the open bays of Lake Erie and Lake Ontario. Widely known as "Blue Bills," owing to the slaty blue color of the bill, plumage is black and white. The nest is made of marsh grass and lined with feathers; six to ten eggs, pale greenish grey. Size 2.50 x 1.70. Made in November, 1862.

30—(148)—**SCAUP DUCK**—**BLUE BILL**—*Marila marila*—(Female)—The great majority of these ducks are spring and autumn visitors to southern Ontario. Some, however, remain through the winter on the open waters of Lakes Erie and Ontario. Made in April, 1847. See 29, 243.

31—(150) **RING-NECKED DUCK**—*Marila collaris*—(Female)—A rather uncommon duck, most frequently seen in spring and autumn. The habits of the Ring-necked Duck do not differ from the Scaup Duck. They lay from waters of Lakes Erie and Ontario. Made in April, 1847. See 29, 243.

32—(150) **RING-NECKED DUCK**—*Marila collaris*—(Male)—A rather rare migrant in spring and autumn; probably breeds in the interior. This duck has a narrow chestnut collar around the neck. The back is black and the speculum grey. Made April 17, 1843.

33—(151) **GOLDEN-EYE DUCK**—*Clangula clangula americana*—(Male)—Common winter visitor, breeding in the interior of the province. The bulk arrive in southern Ontario about the end of October, and remain wherever there is open water until the ice breaks up in the spring. Hand-some ducks, known as "Whistlers," from the noise of their wings when flying, and "Great Heads," because of the puffy crest. Made in Nov., 1863. See 34, 244, 365.

34—(151) **GOLDEN-EYE DUCK—WHISTLER—***Clangula clangula americana*—(Female)—Common winter resident of the southern part of Ontario; breeds in the interior. This species nests in hollow trees near the water, lining the cavity with grass, moss and leaves, and down from their breasts. In May and June they lay from six to ten eggs of a greyish green color. Size 2.30 x 1.70. Made June 5, 1847. See 33, 244, 365.

35—(153) **BUFFLE-HEAD DUCK—***Charitonetta albeola*—(Male)—This handsome little duck is also known by the names of "Butter-ball" and "Dipper." It is fifteen inches long, and has a large white patch in the back of the head from eye to eye. It is capable of diving to a great depth to get its food, is a common spring and autumn visitor to southern Ontario, breeding at some points throughout the province, probably regularly in the north. Arrives as soon as the ice goes out in the spring, and remains in the autumn until its haunts are frozen over. See 36, 236, 360.

36—(153) **BUFFLE-HEAD DUCK—***Charitonetta albeola*—(Female)—Common spring and autumn visitor throughout the province, breeding at some points in southern Ontario, and probably doing so regularly in the northern portions. Nests in hole in tree stump lined with down. Eggs eight to fourteen. Size 2.00 x 1.40. Made Nov. 9, 1843. See 35, 236, 360.

37—(154) **OLD SQUAW—COWEEN—***Harelda hyemalis*—(Female)—A very abundant winter resident on the lakes, arriving about the beginning of November, and departing at the end of April. Breeds along the Arctic coast. Is called "Long-tailed Duck." In summer the plumage of the male is blackish brown with a white patch around the eye. In winter they are largely white. The central tail feathers are much lengthened. They place their nests of grasses and weeds on the ground near the water. Eggs number from six to twelve. Size 2.00 x 1.50. See 246.

38—(163) **AMERICAN SCOTER—***Oidemia americana*—(Female)—A regular winter visitor to the Great Lakes, but never very common. Breeds in the Arctic regions. Scoters, or "Coots," as they are called, are Sea Ducks. It is entirely black without markings, base of bill yellow and orange. Nest a hollow in the ground lined with down. It conceals its nest like the Elder. Six to ten eggs of a dingy buff color. Size 2.50 x 1.70. Made in Nov., 1863.

39—(164) **VELVET DUCK—***Oidemia fusca*—(Female)—A European duck, which has sometimes visited American waters. Called "Velvet Scoter." The females of all the Scoters are a dingy brownish color, but show the characteristic marking of the species, although the white is dull and sometimes mottled. Made in October, 1860.

40—(166) **SURF SCOTER—***Oidemia perspicillata*—(Female)—Breeds along the coast or in the interior, building a nest lined with down in the marsh grass bordering small ponds. They lay from five to eight buffy cream-colored eggs. Size 2.40 x 1.70. The Surf Scoter is a regular but not common visitor to our lakes in spring and autumn. Made in Nov., 1863.

41—(166) **SURF SCOTER—***Oidemia perspicillata*—(Female)—Made in April, 1870.

42—(167) **RUDDY DUCK—***Erismatura jamalcensis*—(Male)—Common in spring and autumn. Breeds from our southern boundary northward. May be recognized by the brownish or chestnut upper parts, blackish crown, white cheeks and silver white under parts. The bill is very stout and broad at the end, and the tail feathers are stiff and pointed like those of a Cormorant. See 43, 236, 362.

43—(167) **RUDDY DUCK**—*Eriamatura jamaicensis*—(Female)—Common in spring and autumn. Breeds from our southern boundary northward. Nests are built in low, marshy places, made of rushes and grasses, sometimes lined and sometimes not, with down from the parents' breast. Eggs from six to twelve, greyish in color. Size 2.40 x 1.75. Made October 20, 1859. See 42, 236, 362.

44—(172)—**CANADA GOOSE**—*Branta canadensis canadensis*—A regular spring and autumn visitor, but not nearly so abundant as formerly. Has occasionally been found nesting in southern Ontario, but they usually resort to the marshes of the north for that purpose. Its familiar "honk" has long been regarded as the signal of the coming of spring, and the V-shaped formation in which the flocks migrate is of interest to everyone. They construct quite a large nest of weeds and grass, lined with a few feathers. Four to nine eggs of a buff or drab color. Size 3.50 x 2.50. See 248, 366.

45—(181) **TRUMPETER SWAN**—*Olor buccinator*—A very rare visitor; breeds in the barren grounds of the Arctic. A magnificent bird, five and one-half feet in length, snow white. The bill is entirely black. Nest a mass of weeds, sods and grass. Eggs are soiled whitish, and number from three to six. Size 4.00 x 2.75 or a trifle larger. Made April 6, 1847.

IBISES, STORKS, HERONS, ETC.—ORDER VII.—HERODIONES.

BITTERNS AND HERONS—Family Ardeidae.

Herons and Bitterns are long-legged waders, having straight-pointed bills and with head feathered, except for the lores.

46—(191) **LEAST BITTERN**—*Ixobrychus exilis*—(Male)—This bird is an abundant summer resident of the larger marshes of southern Ontario; breeding throughout its range. Arrives about the middle of May, and leaves early in September. A small variety, very quiet and shy. When approached they will remain perfectly quiet, with body erect and the head and neck pointed skyward, in which position their yellowish brown plumage resembles the rushes among which they are found. Their nests are of strips of rushes woven together about upright stalks generally over water. They lay from three to five eggs of a pale bluish white color. Size 1.20 x .90. See 249, 373, 556.

47—(194) **GREAT BLUE HERON**—*Ardea herodias herodias*—(Young)—A common summer resident; breeding in communities in the interior of the province. The Great Blue Heron is four feet in length. Its general color is a bluish grey, relieved by a black crest and a white crown. They breed singly or in colonies, placing their rude platforms of sticks well up in trees near ponds, swamps or rivers. Unless disturbed, they return to the same breeding grounds year after year. Three to five greenish blue eggs. Size 2.50 x 1.50. Made in September, 1863. See 250, 375.

CRANES, RAILS, ETC.—ORDER VIII.—PALUDICOLAE.

RAILS, GALLINULES AND COOTS—Family Rallidae

Members of this family are almost exclusively frequenters of marshes, where they lead a shy, retiring life, and are more often heard than seen.

48—(212) **VIRGINIA RAIL**—*Rallus virginianus*—(Adult)—Length about nine inches, found chiefly in fresh water swamps, where it builds in tufts of rushes. An abundant summer resident, arriving about the middle of April, and leaving early in October. Eggs number from six to fourteen, and are a creamy white or white speckled with reddish brown. Size 1.25 x .90. Made July 15, 1845.

49—(214) **SORA RAIL**—*Porzana carolina*—(Young)—About eight inches long, and known by the black face and throat of the adult. It is a very abundant summer resident of marshes all over the province. Arriving about the middle of April, and departing about the end of October. They are annually slaughtered by thousands in the United States, and it is only because of the large families that they rear that they are able to withstand this decimation of their ranks. During May they lay from six to sixteen eggs of a bright buffy grey color, spotted with reddish brown and lavender. Size 1.25 x .90. See 252, 380.

50—(219) **FLORIDA GALLINULE** (2)—*Gallinula galeata*—A common summer resident of the southern marshes of Ontario; breeding throughout its range. Arrives about the middle of April, and departs towards the end of October. This bird is thirteen inches long, dark slate colored, with flanks streaked with white and bill and crown plate reddish. Nests in marshes and swamps. Eggs pale buff, spotted with rufous brown. Size 1.75 x 1.20. See 253, 379, 562.

MOORHEN (1)—*Gallinula chloropus*—A common British bird, frequenting rush bordered streams and marshy places.

51—(221) **AMERICAN COOT**—*Fulica americana*—(Adult)—The Coot bears some resemblance to the Gallinule, but is somewhat larger. Its bill is white with a blackish band about the middle, and each toe has a scalloped lot. They are a common summer resident, breeding sparingly in our southern marshes and sloughs, and more abundantly northward. In order to avoid observation the Coot skulks through the grass rather than flies. Nests are either floating piles of decayed vegetation or dead rushes in clumps on the banks. Eggs six to ten, of a greyish ground color and speckled over the surface with blackish. Size 1.80 x 1.30. Made Oct. 7, 1862. See 256, 381.

SHORE BIRDS—ORDER IX.—LIMICOLAE.

PHALAROPES—Family Phalaropodidae.

Phalaropes are small plover-like birds, but with lobate webbed feet similar to those of the Grebes and Coots.

52—(222) **RED PHALAROPE**—*Phalaropus fulicarius*—This species, an irregular spring and autumn visitor of rare occurrence, is about nine inches in length. All the Phalaropes are good swimmers and this species is often found in large flocks off the coast floating on the surface of the water. They feed upon small marine insects, nest in hollows on the ground lined with a few grasses; eggs three or four in number, greenish buff color blotched with brown and blackish. Made Oct. 15, 1868. See 254.

SNIPES, SANDPIPERS—Family Scolopidae.

Members of this family are long-legged waders, and found either about streams or ponds in the interior or along the coasts. They feed upon small shell fish or insects which they get usually by probing in the soft mud.

53—(228) **AMERICAN WOODCOCK**—*Philohela minor*—(Male)—A summer resident of swampy woods, and one of our best game birds, breeds throughout its range in Ontario. Arrives about the end of March and departs in November, usually remaining until the first severe frost. Their flight is very rapid and erratic and accompanied by a peculiar whistling sound made by the rapid motion of the wings. Their eggs are laid upon the bare ground among the leaves and sticks. They are of about the color of dead leaves as is also the bird, making it quite difficult to discover their nests; four eggs of a buffy color with reddish brown spots. Size 1.50 x 1.15. Made in June, 1859. See 257, 388.

54—(230) **WILSON'S SNIBE**—*Gallinago delicata*—(Adult) -Abundant in spring and autumn, the majority going north to breed. Some, however, raise their young in the larger marshes throughout the province. The first arrivals in spring generally appear before the end of March, and in the autumn the last stragglers remain until the marshes freeze up. This bird is eleven inches long. Their nests are depressions in low, grassy meadows, generally unlined. Three or four eggs, olive-grey color, strongly marked with blackish brown. Size 1.50 x 1.10. See 258, 389.

55—(231) **DOWITCHER**—*Macrorhamphus griseus griseus* This rare spring and autumn visitor to the shores of the lakes is commonly known as "Red-breasted Snipe," because of the rich rusty red of the underparts and as "Grey Back" in winter, because of its color at that season. Their bill is very long, two inches and over, and nearly one quarter the length of the whole bird. They place their three or four eggs in a slight hollow, eggs greenish or brownish buff, boldly marked with dark brown. Made October 10, 1865. See 259, 260.

56—(239) **PECTORAL SANDPIPER**—*Pisobia maculata* -A common autumn visitor to the marshes and sandbars, not observed in spring. Arrives in July, leaves about the end of October. This is a very peculiar species, having the power during the mating season of inflating the throat to a great extent making a balloon-like appendage, nearly the size of the bird. They have more the habits of the snipe than most of the sandpipers, frequenting grassy meadows or marshes in preference to the seashore. Nests are grass-lined depressions. Eggs greyish or greenish buff, blotched with brown. Size 1.45 x 1.20. Made April 10, 1843. See 261.

57—(243a) **RED-BACKED SANDPIPER—BLACK HEART PLOVER**—*Pelidna alpina sakhalina*—A very abundant visitor in the spring, arriving about the 20th May, and going north about the end of the first week in June. In the autumn they are much less abundant, the majority going south by another route. The first of the autumn flight arrive early in October, and by the end of November the last have gone. They are very handsome birds, eight inches in length, with nesting habits similar to others of the family. Three or four eggs, greyish or greenish buff color, heavily blotched and spotted with shades of brown and chestnut. Size 1.40 x 1.00. Made Nov. 10, 1866. See 260.

58—(243a) **RED-BACKED SANDPIPER—BLACK HEART PLOVER**—*Pelidna alpina sakhalina*—Made June 1, 1843. See 259.

59—(246) **SEMI-PALMATED SANDPIPER (STINT)**—*Ereunetes pusillus*—Very abundant from about the 20th of May to the end of the first week in June, and from the middle of July until the end of the first week in September. Their appearance is very similar to that of the Least Sandpipers, but they are slightly larger and the feet are partially webbed. Egg greenish buff or grayish ground color, spotted with brownish or blackish. Size 1.20 x .80. Made Aug. 1, 1857. See 261.

60—(251) **HUDSONIAN GODWIT**—*Limosa haemastica* -A rare visitor to the shores of our lakes; breeds on the barren grounds. Length eighteen inches. Color deep reddish brown below. They lay four eggs on the ground in marshes, lining the hollow with weeds and dried leaves. The eggs are of a dark brownish buff ground color, and blotched with brownish black. Size 2.20 x 1.40. Made Oct. 11, 1844.

61—(254) **GREATER YELLOW-LEGS**—*Totanus melanoleucus*—Common in spring from early in April until the first week in May. In the autumn sometimes abundant, arriving about the end of July, and remaining until the end of October. Breeds in the far north. These birds are

commonly called "Tall Tale." The legs are yellow and long. Length fourteen inches. Eggs laid on the ground in an open marsh. They are greyish white boldly splashed with shades of brown and lilac. 1.65 x 1.25. See 262.

62—(254) **GREATER YELLOW-LEGS**—*Totanus melanoleucus*—Oct. 20, 1862.

63—(256) **SOLITARY SANDPIPER**—*Helodromas solitarius solitarius*—A bird with greenish-grey back, barred with white and white below. Length 8.5 inches. Generally distributed through the province, but where abundant. In the spring migration this bird is rarely seen; but in July, after breeding, it may be found along the margins of our streams upon muddy flats in the marshes. It departs about the end of September. The eggs are very rarely found. They are clay colored, spotted with brownish black. Five in number. Made July 24, 1859. See 262.

64—(263) **SPOTTED SANDPIPER**—*Actitis macularius*—An abundant summer resident; breeding throughout the province. Arrives about 1st of May; departs about the middle of September. The young, like those of all shore birds, are hatched covered with down, and run about as soon as born. The adults attempt to lead an enemy away from the young by feigning a broken wing or lameness. It is a small wader, 7.5 inches length, the most abundant of all the shore birds, and its "peet weet" is a familiar sound to every country boy. The Spotted Sandpiper has a peculiar habit of moving its tail up and down when at rest on a stone or running along the shore, thus receiving the very common names of "Teeter Tail" and "Tip Up." Eggs number three to five, greyish buff, heavily spotted with dark chocolate. Size 1.30 x .90. Made July 24, 1859. See 262, 386.

PLOVERS—Family Charadriidae.

Plovers are more stoutly built than Sandpipers, have larger heads, shorter necks and but three toes. The bill is also much harder and shorter.

65—(270) **BLACK-BELLIED PLOVER**—*Squatarola squatarola*—A remarkably handsome species when in summer dress: known to sportsmen as the "Bull-head" or "Beetle-head Plover." It has a very small hind toe; is a common spring and autumn visitor; passing through in the spring migration between the 20th of May and the end of the first week in June. They return from the north in August, and remain until the middle of October. Breeds in the Arctic regions. The eggs are three or four in number, brownish or greenish buff in color, and boldly marked with black. Size 2.00 x 1.40. Made May 25, 1867. See 66, 265, 395.

66—(270) **BLACK-BELLIED PLOVER**—*Squatarola squatarola*—Made in November, 1862. See 65, 265, 395.

67—(273) **KILLDEER PLOVER**—*Oxyechus vociferus*—(Adult)—A common summer resident generally distributed over the province, breeding wherever it occurs. Arrives about the end of March, departs early in October. They are very noisy birds, continually uttering their "Killdeer," from which they take their name. Eggs are drab or greenish buff spotted with black. Size of eggs 1.50 x 1.10. Made in October, 1865. See 265, 387.

68—(274) **SEMI-PALMATED PLOVER**—*Aegialitis semipalmata*—Common along the shores of the lakes from the middle of May to the end of the first week in June, when they go north to breed. In July they return and are abundant until the end of September. Have occasionally been found nesting in this province. They have a small web between the bases

long. Length of of the two outer toes, single broad black band across the breast. Black line from base of bill to eye. They are usually unsuspicious, and will allow a close approach. Nest on the ground. Eggs buffy speckled with black. Size 1.30 x .90. Made May 26, 1843. See 265.

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69—(277) **PIPING PLOVER**—*Aegialitis meloda*—(Adult)—A regular but not common summer resident. They arrive early in May, and probably leave as soon as the young can fly, for they are not seen in the autumn; hand-one little bird with a black crescent on each side of neck a small black patch on top of the head. It is the lightest colored of any of the eastern Plovers. Length seven inches. They are rather shy and will attempt to escape by running along the beach or by hiding rather than by flight. They lay their eggs on sandy beaches and unlined hollows. Eggs pale clay colored ground and sparsely speckled with black dots. Size 1.25 x 1.20. Made May 24, 1845. See 393.

GALLINACEOUS BIRDS—ORDER X.—GALLINAE.

GROUSE, PARTRIDGES, ETC.—Family Tetraonidae.

Members of this family are birds of robust form, comparatively short legs and neck. The tarsi and toes are feathered in the Ptarmigan, the tarsi only, feathered in the Grouse, and the tarsi and toes bare in the Bob Whites. They feed upon berries, buds, grain and insects.

70—(289) **BOB WHITE**—*Colinus virginianus virginianus*—(Male and female)—A common resident in the south-western counties of the province, sometimes ranging east to the County of Ontario—a valuable game bird and one of the farmer's best friends. Their nests are built on the ground, and are made of dried grasses arched over with hanging leaves so as to conceal the eggs. Ten to twenty pure white eggs. Size 1.20 x .95. Two or three broods are raised in a season. See 266, 403.

71—(300a) **CANADA RUFFED GROUSE—PARTRIDGE**—*Bonasa umbellus togata* The Ruffed Grouse is "King of the Game Birds," and a common resident in woodlands throughout the Province of Ontario. Resorts are heavily timbered woods. Nests are hollows in the leaves under fallen trees. When the bird flies it makes a rumble and roar, which disconcerts the novice. Eight to fifteen eggs, brownish buff color with a few faint markings of brown. Size 1.55 x 1.15. The adults are skilful in leading enemies away from their young, feigning lameness, broken wings, etc. Made April 30, 1835. See 267.

PIGEONS AND DOVES—ORDER XI.—COLUMBAE.

Family Columbidae.

Pigeons and Doves are distributed throughout nearly every temperate and tropical country on the globe, five hundred species being known, of which two occur within our limits. Their plumage is soft and subdued in color, the head small, the wing strong and the flight rapid.

72—(315)—**PASSENGER PIGEON**—*Ectopistes migratorius*—(Male and Female)—This handsome species is practically exterminated by being hunted and trapped. It was formerly a very abundant summer resident, occurring in flocks of countless thousands. Nests very rude, frail platforms of twigs, on which one or two white eggs are laid. Size of eggs 1.50 x 1.02. See 73, 268, 396.

73—(315) **PASSENGER PIGEON**—*Ectopistes migratorius*—(Young)—Formerly a very abundant summer resident, occurring in flocks of countless thousands, now practically extinct. Made June 23, 1860. See 72, 268, 396.

74—(316) **MOURNING DOVE**—*Zenaidura macroura carolinensis*—(Young)—A common summer resident, but somewhat locally distributed. Many winter in the south-western counties of Ontario. Now that the Passenger Pigeon has practically disappeared this species becomes the only one found in Ontario. Their nests are generally at a low elevation, of twigs and rootlets, and eggs may be found from early in April until the latter part of September. Two eggs, white. Size 1.15 x .80. See 75, 268, 400.

75 (316) **MOURNING DOVE**—*Zenaidura macroura carolinensis*, See 74, 268, 400.

VULTURES, HAWKS AND OWLS—ORDER XII.—RAPTORES.
KITES, HAWKS AND EAGLES—Family Buteonidae.

The members of this family live by preying upon small animals or birds. They have strong, sharply hooked bills, powerful legs and feet armed with curved and sharply pointed talons.

76—(331) **MARSH HAWK**—*Circus hudsonius*—(Female)—This species is easily identified by the white patch on the rump. It is a common summer resident, breeding in secluded marshy places throughout the province. Arrives early in April, leaves about the end of October. One of our most useful hawks, feeding principally upon the destructive meadow mouse. Their nests, well lined with grasses or rushes, are made in swampy ground in the centre of a hummock or clump of grass. Four to seven pale bluish white eggs. Size 1.80 x 1.40. Made in Oct., 1860. See 269, 410.

77—(332) **SHARP-SHINNED HAWK**—*Accipiter velox*—(Young)—A common summer resident, breeding throughout its range in Ontario. Arrives early in April. The bulk depart about the middle of September, but stragglers often remain until the end of October. This hawk is very destructive to young poultry and small insectivorous birds. It is one of the smallest of the Hawks, and, in the adult, has most beautiful plumage, being barred below with light brown and having a bluish slate back. Its nest is a rude frail platform of twigs and leaves placed against the trunk of a tree. Eggs are bluish white, blotched and spotted with shades of brown. See 270, 408.

78—(333) **COOPER'S HAWK**—*Accipiter cooperi*—(Young)—A rather uncommon summer resident. Breeds in the interior of the province—a very destructive hawk. Length seventeen inches. The plumage almost exactly the same as that of the preceding hawk. Nest in crotches of high trees, made of sticks and twigs, and often lined with pieces of bark. Eggs bluish white, faintly spotted with pale brown. Made June 2, 1843. See 269, 270, 272.

79—(334) **GOSHAWK**—*Astur atricapillus atricapillus*—(Adult)—A winter visitor to southern Ontario, resident and breeding in the interior—very destructive to game and poultry. One of the largest and strongest species, very handsome in the adult plumage. Length twenty-three inches. Nest in the tallest trees in dense woods. Three or four eggs, bluish white, occasionally with faint spots of brown. Size 2.30 x 1.70. Made November 10, 1860. See 80, 271, 407.

80—(334) **GOSHAWK**—*Astur atricapillus atricapillus*—(Young)—A winter visitor to southern Ontario, resident and breeding in the interior—very destructive to game and poultry. Made November, 1868. See 79, 271, 407.

81—(339) **RED-SHOULDERED HAWK**—*Buteo lineatus lineatus*—(Adult)—Length nineteen inches. They rarely feed upon poultry, confining their diet to mice, rats, frogs, snakes, etc. Summer resident tolerably common in some parts of Ontario; breeds in the interior. Specimens are

occasionally seen in winter. Nest in the larger growths of timber, high above the ground; the nest is of sticks lined with leaves, weeds and bark. Three or four eggs, a white ground color, blotched and spotted with different shades of brown. Size 2.15 x 1.75. See 273, 414.

82—(343) **BROAD-WINGED HAWK**—*Buteo platypterus*—(Young)—This hawk, a common summer resident, breeding throughout its range in Ontario, has a weird cry, like the creaking of branches. A medium-sized bird, sixteen inches in length, short tail and broad rounded wings. Adults have the under parts handsomely barred with brown. Nest in the crotch of large trees, made of sticks and lined with bark. Two to four eggs, greyish in color, spotted and blotched with brown. Size of eggs 1.90 x 1.55. See 274, 412.

83—(352) **BALD EAGLE**—*Haliaeetus leucocephalus leucocephalus*—(Young)—A resident species which formerly regularly nested in certain localities along the shores of the lakes, but has now retired to the quiet of the interior, only visiting southern Ontario in the winter. It only attains the white head and tail when three years old. Adult is thirty-four inches in length and expands seven feet. Food consists of fish (which they sometimes capture themselves, but more often take from the osprey), carrion and ducks; their nests are massive structures of sticks in the top of tall trees. Two eggs, which are white. 2.75 x 2.10. See 269, 275, 421.

FALCONS—CARACARAS—Family Falconidae.

84 (356a) **DUCK HAWK**—*Falco peregrinus anatum*—(Young)—A regular, but not common, autumn visitor to southern Ontario; rarely seen in the spring; has been found nesting in eastern Ontario and also in Muskoka. This beautiful bird is characterized by its black moustache and is the most graceful, fearless and swift of the Falcons, striking down birds of several times its own weight, such as the larger ducks. It lays its eggs on rocky ledges. They are the darkest, brightest marked and most beautiful of all Falcon eggs. Color buff or reddish buff, heavily marked with brown. Size 2.05 x 1.55. See 269.

85—(356a) **DUCK HAWK**—*Falco peregrinus anatum*—(Young)—A regular, but not common, autumn visitor to southern Ontario; rarely seen in the spring; has been found breeding in eastern Ontario and also in Muskoka. Made Oct. 25, 1846.

86—(360) **AMERICAN SPARROW HAWK**—*Falco sparverius sparverius*—(Female)—A common summer resident, breeds throughout its range in Ontario, arrives early in April, departs about the end of September. A very useful hawk, feeding chiefly on mice and insects; one of the smallest of American hawks, only ten inches in length. The birds are very noisy, especially when the young are learning to fly, uttering a loud tinkling "killy, killy, killy." They are very amiable birds and nest harmoniously in the same tree with other birds, such as Flickers, Robins, etc. Nest in cavities in trees either in woods or open fields. Eggs buff in color, spotted or blotched with reddish brown. Size 1.35 x 1.10. Made August 24, 1860. See 278, 409.

OSPREY—Family Pandionidae.

87—(364) **OSPREY**—*Pandion haliaetus carolinensis*—(Adult)—Summer resident, breeding in suitable places in Ontario. Its nesting places now are in the unsettled parts of the interior where the lakes are still surrounded by trees sufficiently large to meet the bird's requirements. Arrives in April, departs at the end of September. This great fisher is protected by law in a great many States on the other side. It is a pleasant sight to watch a number of these birds as they soar

at an elevation above the water waiting for fish to come to the surface when, with folded wings, the bird speeds downward and plunges into the water, rarely missing its prey. Nests are platforms of sticks used year after year, and, being added to, become of enormous proportions. Eggs two or three, bright cream color, blotched with chestnut brown. Size 2.40 x 1.80. See 289, 411.

HORNED OWLS—Family Bubo.

88—(367) **SHORT-EARED OWL**—*Asio flammeus*—Sometimes very common in the autumn about the low meadows and marshes, occasionally breeding in southern Ontario. This bird is fifteen inches in length, has very short ear tufts, and is streaked beneath. Its food consists almost entirely of small rodents, which they hunt towards dusk and at night over the marshes and meadows. Four to seven white eggs laid upon the ground on a lining of sticks and weeds under a bush or close to an old log. Size of eggs 1.55 x 1.25. Made in November, 1863. See 89, 283, 423.

89—(367) **SHORT-EARED OWL**—*Asio flammeus*—This owl is sometimes very abundant in the autumn about the low meadows and marshes. It occasionally breeds in southern Ontario, but the great majority retire to the marshes of the interior for that purpose. Made in November, 1863.

90—(368) **BARRIED OWL**—*Strix varia varia*—Generally distributed through the province, but not common anywhere. Nests have been found all through its range. Its length is twenty inches; food chiefly of rats, mice and frogs, and, sometimes, but not often, poultry. Nests in hollows of large trees in the forest. Four pure white eggs. Size 1.95 x 1.65. See 280.

91—(372) **SAW-WHET OWL**—*Cryptoglaux acadica acadica*—(Female)—Although this little owl is a resident of Ontario, it is peculiar in its distribution. It is most frequently seen in winter and will in some seasons be quite common in the locality for a time, and may not again be seen there for several years. It breeds sparingly in southern Ontario. Length eight inches. They nest in hollow trees in deserted woodpecker holes and have been known to nest in bird boxes near farm houses. They lay from three to six white eggs. Size 1.20 x 1.00. Made in April, 1865.

92 (371)—**SAW-WHET OWL**—*Cryptoglaux acadica acadica*—(Young) Made in July, 1859. See 281.

93—(375) **GREAT-HORNED OWL**—*Bubo virginianus virginianus*—(Adult)—A fairly common resident, breeding throughout its range; the strongest and most courageous of our birds of prey. This bird, which is twenty-two inches in length, captures rabbits, grouse and poultry, and has been known to kill and eat skunks. Deserted hawk or crow nests are used if they are located in dense woods. They also sometimes nest in cavities in large trees. Two to four white eggs. Size 2.25 x 1.85. See 283, 416.

94—(376) **SNOWY OWL**—*Nyctea nyctea*—A winter visitor from the Arctic regions, occurring in varying numbers almost every season. This beautiful species varies in plumage from pure white to specimens heavily and broadly barred with blackish brown. It is next to the Great Gray Owl, being two feet in length. They feed upon hares, squirrels and smaller mammals, as well as grouse, etc. They nest upon the ground in a hollow in the moss. Two to eight eggs, white in color. Size 2.25 x 1.75. Made in November, 1862. See 95, 280, 422.

95—(376) **SNOWY OWL**—*Nyctea nyctea*—A winter visitor from the Arctic regions, occurring in varying numbers almost every season. Made in November, 1862. See 94, 280, 422.

CUCKOOS, KINGFISHERS, ETC.—ORDER XIV.

Family Cuculidae.

96—(388) **BLACK-BILLED CUCKOO**—*Coccyzus erythrophthalmus*—A common summer resident, breeding throughout its range in Ontario. Arrives about the 20th of May—departs about the end of September. All the Cuckoos are close sitters, and will not leave the nest until nearly reached with the hand, when they will slowly flutter off through the underbrush and continue to utter their mournful "Kuk, kuk, kuk," many times repeated. Nests on bushes or low trees are made of twigs lined with shreds of grape vine bark or catkins, and are so flat on the top that the eggs frequently roll off. Three or four eggs, greenish blue. Size 1.15 x .85. Made July 20, 1843. See 284, 434.

KINGFISHERS—Family Alcedinidae.

97—(390) **BELTED KINGFISHER**—*Ceryle alcyon*—(Female) A common summer resident, breeding throughout its range in Ontario. Arrives about the beginning of April—departs early in October. Its rattling notes are among the most familiar of sounds in all localities near water. Their food is small fish. Nests are located in tunnels which are dug by the birds, commencing two or three feet from the top of the bank and extend back from six to eight feet. The end is enlarged to form a suitable nesting place. Five to eight eggs, pure white and glossy. Size 1.35 x 1.05. Made July 2, 1860. See 284, 437.

WOODPECKERS—ORDER XV.—PICI.

Family Picidae.

Woodpeckers have sharp, chisel-like bills sharp pointed and stiff tail feathers, feet with two toes forward and two back, except in one genus. Their food is insects and grubs, which they get from boring in trees, clinging to the sides of the trunks with their strong curved nails, aided by the tail for a prop.

98—(394c) **DOWNY WOODPECKER**—*Dryobates pubescens medianus*—(Female)—The smallest of the North American Woodpeckers, length six inches. A common resident, breeding throughout the province; a very useful bird in woodlot, orchard and garden. They nest in holes in trees. Three to six glossy white eggs are laid upon the bottom of the cavity. Size 75 x .60. Made Feb. 7, 1843. See 285, 427.

99—(402) **YELLOW-BELLIED SAPSUCKER**—*Sphyrapicus varius varius*—(Adult)—A common summer resident, breeding throughout its range in the Province of Ontario, chiefly in the north. Arrives about the middle of April—departs about the middle of September. These can be recognized by the red crown and throat (white on the female), each bordered by black, and the yellowish underparts. They are the only woodpeckers ever injurious to cultivated trees, but that only to a slight extent, in boring holes for the purpose of obtaining sap. Four to seven glossy eggs in the bottom of holes in trees. Size of eggs, .85 x .60. See 288, 429.

100—(405a) **NORTHERN PILEATED WOODPECKER**—*Phloeotomus pileatus abieticola*—(Male and female)—Resident, but restricted to that part of the country still covered with heavy timber. About seventeen inches in length. Breed in most heavily timbered districts. Nest in a cavity twenty-five inches in depth and eight inches in diameter. Very shy birds. Lay from three to six white eggs. Size 1.30 x 1.00. Made Jan. 23, 1843. See 289, 432.

101—(406) **RED-HEADED WOODPECKER—ALBINO—***Melanerpes erythrocephalus*—A summer resident, breeds throughout its range in the province. Arrives early in May, and departs early in September. They feed upon insects and many kinds of fruits and berries. Lay from four to eight white eggs. Size 1.00 x .75. Made in July, 1859. See 102, 288, 425.

102—(406) **RED-HEADED WOODPECKER—***Melanerpes erythrocephalus*—(Adult and young) Made in July, 1859. See 101, 288, 425.

103 (406) **RED-BELLIED WOODPECKER—***Centurus carolinus*—(Female) A rare summer resident of the south western counties of Ontario. Occasionally it wanders as far east as Toronto. These birds are quite tame, and during winter months come about yards and houses. Eggs laid during May are glossy white and number four to six. Size 1.00 x .75. See 290, 424.

104—(412a) **NORTHERN FLICKER—HIGH HOLER—***Colaptes auratus luteus*—(Adult female and young)—Common summer resident breeds throughout the Province of Ontario. Arrives about the middle of April, depart about the middle of October. Flickers are large woodpeckers, with a brownish tone to the plumage. They are often found on the ground in pastures, or on side hills, feeding upon ants. They nest in cavities in trees, fence posts, holes under roofs of buildings, etc. Eggs white, five to ten, and very glossy. Size of eggs 1.10 x .90. Made June 27, 1859. See 290, 428.

GOATSUCKERS, SWIFTS AND HUMMINGBIRDS—ORDER XV'

MACROCHIRES. GOATSUCKERS—Family Caprimulgidae.

Goatsuckers are long-winged birds with small bills and extraordinarily large mouths. They are dusk or night fliers, their food consisting of insects which they catch on the wing. Their plumage is mottled, black, brownish and white, resembling the ground upon which they lay their eggs.

105—(417)—**WHIP-POOR-WILL—***Antrostomus vociferus* *vel* *us*—(Male)—In their pursuit of insects they glide like a shadow over fields and woods, their soft plumage giving forth no sound. Their notes, "Whip-Poor-Will," ring out in wooded, hilly districts. A summer resident in well-landed, somewhat local in distribution; never seen flying about cities. Arrives early in May, departs early in October. Eggs greyish white or cream mottled with pale brown, with fainter markings of lilac. Size 1.50 x .85. See 291, 433.

HUMMINGBIRDS—Family Trochilidae.

Hummingbirds are the smallest of birds. Their plumage is a metallic green with throat or crown patches of the brightest of iridescent shining red, orange, blue or violet. Their flight is accompanied by a buzzing sound, produced by the rapidly vibrating wing feathers. Their food is small insects and honey which they get from flowers.

106—(428) **RUBY-THROATED HUMMINGBIRD—***Archilochus colubris*—(Male and female)—A common summer resident, breeds throughout its range in the province. Arrives about the middle of May, departs about the middle of September. It is a small species, 3.5 inches. Its nest is beautiful, built on horizontal limbs of trees, an inch or more in diameter. The nests are made of plant fibres and down, and the exterior is completely covered with green lichens so that it appears like a small bunch of moss on the limb. Two white eggs. Size .50 x .35. See 292, 438.

PERCHING BIRDS—ORDER XVII.—PASSERES.

FLYCATCHERS—Family Tyrannidae.

Flycatchers, which are found only in America, are insect-eating birds. They all have the habit of sitting erect on a twig and watching for insects which they catch on the wing.

107—(462) **CRESTED FLYCATCHER**—*Myiarchus crinitus*—(Adult)—Common summer resident, breeding in woods and orchards throughout its range in the Province of Ontario. Arrives about the middle of May, departs about the middle of August. This is a shy species. They build in cavities of trees at any elevation, the nest being made of twigs, weeds and trash. Four to six eggs, buff color, blotched and lined with dark brown and lavender. Size .85 x .65. Made in 1859. See 292.

108—(444) **KINGBIRD**—*Tyrannus tyrannus*—(Adult). An abundant summer resident, breeds throughout its range in Ontario. Arrives about the 10th of May, departs about the end of August. They drive away any kind of feathered creature to which they take a dislike, regardless of size. Their sharp clatter is kept up all day long. They nest in trees or on fence rails, and are great insect destroyers. The nests are made of strips of vegetable fibre, weeds, etc., and lined with horse hair or catkins. Three to five eggs, creamy ground color, splashed with reddish brown and lilac. Size .95 x .70. Made in 1859. See 293, 447.

109—(456) **PHOEBE FLYCATCHER**—*Sayornis phoebe*—(Adult)—Known as "Bridge Birds," because they frequently construct their nests under bridges and arches. Freak situations in which to locate their nests are often chosen by these birds, brake beam of a freight car, crevices of old walls, hen houses, etc. The birds are one of the most useful that we have; an abundant summer resident; arriving early in April and departing early in October, and will return year after year to its nesting place on the farm if not molested. Insects constitute nearly their whole bill-of-fare. Nests of mud, moss and grass, lined with feathers. Four or five eggs. Size .75 x .55. See 293, 448.

110 (461)—**WOOD PEWEE**—*Myiobechas virens*—(Adults)—Its pleasing notes may be heard resembling "Pee wee." A common summer resident, breeding in woods and orchards throughout its range in Ontario. Arrives about the middle of May. Departs about the middle of September. They nest on horizontal limbs, making handsome nests of plant fibres and fine grasses, covered on the exterior with lichens. They are shallow and resemble a small knot on the limb of the tree. Three or four eggs of a creamy color, spotted in a wreath about the large end with reddish brown and lavender. Size .80 x .55. Made June 25, 1863. See 294, 445.

111—(467) **LEAST FLYCATCHER**—*Empidonax minimus*—Common summer resident, breeding in orchards, shrubberies and woodlands throughout its range in Ontario. It arrives about the middle of May. Departs at the end of August. Little birds, 5.5 inches long. They are known by the name of "Chebec," from their continually uttered note. Nest of plant fibres, fine grasses, string and cobwebs. Three to five eggs, pale creamy white. Size .65 x .50. See 294.

LARKS—Family Alaudidae.

112—(474b) **PRAIRIE-HORNED LARK**—*Otocoris alpestris praticola*—(Male)—A common summer resident, breeding in open fields wherever it occurs in the province. Arrives about the 10th of February and departs late in November. In the south-western counties of Ontario it is resident; large numbers remaining all winter. Nests are made of grasses and

lined with horse hair or feathers, placed in slight hollows under a tuft of grass or sods. They raise two and sometimes three broods a season. Three or four eggs of buff ground, thickly sprinkled with lavender. Size .83 x .60. Made in 1875. See 295.

CROWS, JAYS, MAGPIES—Family Corvidae.

113—(477) **BLUE JAY**—*Cyanocitta cristata cristata*—A common resident, breeding throughout its range in the province. The most beautiful of North American Jays, but beneath their handsome plumage beats a heart as cruel and cunning as that in any bird of prey. Fall, Winter and Spring their food is acorns, chestnuts, berries, seed, grain, insects, lizards, etc., but in the Summer months they destroy a great many eggs and young of the smaller birds. They are known to watch a nest until it is full of eggs before making their theft. Nests are made of twigs and rootlets in low trees. Four to six eggs of a greenish buff color spotted with olive brown. Size 1.10 x .80. See 296, 451.

114 (486a) **NORTHERN RAVEN**—*Corvus corax principalis*—Tolerably common resident in the interior of the Province of Ontario. Twenty-four inches or a little larger, habits similar to those of the crow, but more dignified. They remain mated for life. They feed largely upon animal matter, lizards, shellfish, frogs, young of birds and carrion. Quite common on the cliffs of Labrador and Alaska. Nest on ledges of high inaccessible cliffs, made of sticks lined with smaller ones and hair or wool. Four to seven eggs laid in April or May. A lightish green color blotched with umber and drab. Size 1.96 x 1.25. Made in Nov., 1859. See 297.

115—(488) **AMERICAN CROW**—*Corvus brachyrhynchos brachyrhynchos*—Abundant resident in southern Ontario; summer resident in the northerly parts of the province. Breeds throughout its range. These birds post a sentinel in some tree top to keep watch while the rest of the flock is feeding in the field below. In the Fall and Winter large numbers of them flock, and at night all roost together in one place of woods. Their nests, placed near the tops of large trees, are made of sticks, lined with rootlets, and the eggs, which are laid in April or May, are four to seven in number, a bluish white densely speckled with various shades of brown and lilac. Size 1.60 x 1.15. See 298, 458.

BLACKBIRDS, ORIOLES, ETC.—Family Icteridae.

116—(494) **BOBOLINK**—*Dolichonyx oryzivorus*—(Male)—Abundant summer resident. The male sings all day long during May and June to his sparrow-like mate, who is sitting on her nest concealed in the meadow grass. Breeds in the hay meadows throughout its range in Ontario, which does not extend north of the cultivated lands. Arrives about the 10th of May. Departs about the end of August. Nests are hollows in the ground with the top slightly arched to conceal the eggs, which are greenish white, clouded, blotched with brownish grey and lilac. Size .84 x .62. Four to six eggs laid in June. Made May 15, 1847. See 299, 466.

117—(495) **COWBIRD**—*Molothrus ater ater*—(Male and female)—An abundant summer resident. Deposits its eggs in the nests of other small birds. Breeds throughout its range. Arrives about the 1st of April, departs early in October. This is about the most injurious bird we have, as each egg deposited by it means the destruction of a whole brood of one of our beneficial species. Their eggs are white, spotted and speckled all over more or less strongly with brown and yellowish brown. Size .85 x .64. Made April 14, 1860. See 300, 469.

115—(498) **RED WINGED BLACKBIRD**—*Agelaius phoeniceus phoeniceus*—(Male)—A very abundant summer resident, breeding in marshes or hay meadows throughout its range in Ontario. Arrives about the middle of March, departs about the middle of October. These birds do considerable damage to grain fields in the Fall, but they do a greater amount of good at other seasons in the destruction of injurious insects and weed seed. They make their nests of grasses woven and twisted together in bushes, in swamps, or over water. Eggs three to five in number, bluish white spotted or lined with blackish brown and purplish. Size 1.00 x .70. See 119, 299, 462.

119—(498)—**RED-WINGED BLACKBIRD**—*Agelaius phoeniceus phoeniceus*—(Young). See 118, 299, 462.

120—(501) **MEADOW LARK**—*Sturnella magna magna*—A common summer resident in southern Ontario, gradually extending its range northward as the land is cleared. Nests on the ground in meadows throughout its range. Arrives towards the end of March. In mild seasons these birds stay very late, and small parties often spend the winter here. This species is of great value to the farmer. It has a high, pleasing, flute-like whistle. They are shy birds and hard to see, and conceal their nests among the tall grass of meadows, arching them over with dead grass. In May or June they lay from four to six white eggs, speckled with reddish brown and purplish. Size 1.10 x .80. Made Feb. 20, 1860. See 301, 464.

121—(507) **BALTIMORE ORIOLE**—*Icterus galbula*—(Male and Female)—Easily identified by its orange flame color and entirely black head. Their nests are made of plant fibres and string and reach in length about ten inches, and half that in diameter. They are attached to drooping branches by the rim, so that they rock to and fro. The Oriole is a common summer resident, breeding throughout its range in Ontario. Arrives early in May, departs about the end of August. The eggs, laid in May and June, are white, streaked and lined with blackish brown and greyish. Size .90 x .60. Made in June, 1859. See 301, 468.

122—(511b) **BRONZED GRACKLE**—*Quiscalus quiscula aeneus*—(Male)—A common summer resident breeding throughout its range in the province. Arrives about the middle of March, departs early in October. This is the most common of the Crow Blackbirds in Ontario, and is distinguished by the brassy color of the upper parts. Large vines appear to be the favorite sites for them to locate their large nests of twigs, weeds, grass and trash. Eggs from three to five, greenish white, splashed, spotted and scrawled with various shades of brown and grey and with streaks of black. Size 1.10 x .80. See 300, 465.

FINCHES, SPARROWS, ETC.—Family Fringillidae.

123—(514) **EVENING GROSBEAK**—*Hesperiphona vespertina vespertina*—(Male)—They breed in the mountainous portions of their summer range, placing their flat nest of sticks or rootlets in low trees or bushes. Eggs, laid in May or June, are greenish white, spotted and blotched with brown. Size .90 x .65. An irregular winter visitor from the west. Made in February, 1864. See 305, 484.

124—(515) **PINE GROSBEAK**—*Pinicola enucleator leucura*—(Male and female)—An irregular winter visitor to southern Ontario; in some seasons quite common, in others entirely absent. Breeds far north. They build in conifers, making their nests of small twigs and rootlets lined with fine grasses and lichens. In May or June they lay three or four eggs, greenish blue, spotted and splashed with dark brown with fainter markings of lilac. Size 1.00 x .70. See 125, 126, 302, 496.

125—(515) **PINE GROSBEAK**—*Pinicola enucleator leucura*—(Female)
—Made in November, 1842. See 124, 126, 302, 496.

126—(515) **PINE GROSBEAK**—*Pinicola enucleator leucura*—(Female)
—Made March 2, 1865. See 124, 125, 302, 496.

127—(517) **PURPLE FINCH**—*Carpodacus purpureus purpureus*—(Male and female)—A common resident and a beautiful songster. Breeds throughout its range in Ontario. Their nests are made of fine weeds and grasses and lined with horse hair. They nest in trees, in orchards, or in evergreens. The eggs, laid in June, are greenish blue, spotted with dark brown. Size .85 x .65. Made in May, 1863. See 302, 494.

128—(522) **WHITE-WINGED CROSSBILL**—*Loxia leucoptera*—(Male)—They have a roving disposition, and are apt to be found in any unexpected locality. This species is rosy red with two white wing bars. Eggs greenish white, spotted with brown and with lavender shell markings, very blotchy. Size .80 x .55. An irregular visitor to southern Ontario—never abundant. Resident in the northern part of the province. Made in November, 1875.

129—(528) **REDPOLL**—*Acanthis linaria linaria*—(Male and female)—Generally common in winter, but sometimes entirely absent. Breeds in the far north, near Hudson's Bay. Feeds on seeds of weeds which project above the snow. Its flight is similar to that of the Goldfinch. Nests in low elevations. Eggs, three to six, pale bluish, speckled with reddish brown. Size .65 x .50. Made March 2, 1864. See 304, 495.

130—(756) **VEERY—WILSON'S THRUSH**—*Hylocichla fuscescens*—An abundant summer resident of woodlands. Breeds throughout its range in the province. Arrives early in May, departs at the end of August. Nests on the ground or near it, making a structure of woven bark strips and grasses in the midst of a clump of ferns or low shrubbery. Three or four eggs, bluish green. Size .90 x .65. Made June 11, 1859. See 185, 331, 545.

131—(529)—**AMERICAN GOLDFINCH**—*Astragalinus tristis tristis*—(Male and female)—The wild canary, as it is commonly called, is one of the best known Ontario birds, its bright color and sprightly song combining to render it attractive. It breeds in all parts of the Province of Ontario. More abundant in summer than in winter, a large number going south at the approach of cold weather. Made June 11, 1859. See 132, 304, 305, 488, 561.

132—(529)—**NEST OF AMERICAN GOLDFINCH**—*Astragalinus tristis tristis*—It builds in small trees, often in gardens or orchards, and in shade trees by the roadside. The nest is made of plant fibres and thistledown firmly woven together. Three to six plain bluish white eggs. Size .65 x .50. Made August 7, 1864. See 131, 304, 305, 488, 561.

133—(534)—**SNOW BUNTING—SNOWFLAKE**—*Plectrophenax nivalis nivalis*—A common winter visitor, arrives about the end of October, departs about the middle of March; breeds in the Arctic regions. Their nests are built on the ground, being sunk into the sphagnum moss, and made of grasses lined with feathers. Four or five greenish white eggs, splashed with yellowish brown and lilac. Size .90 x .65. Made February 9, 1860. See 306, 493.

134—(540) **VESPER SPARROW—BAY WING**—*Poecetes gramineus gramineus*—An abundant summer resident in open fields, building on the ground in a hollow lined scantily with grasses. Breeds throughout its range in Ontario; arrives about the middle of April, departs early in October. Their clear, musical song is known to many frequenters of weedy pastures. Four or five eggs, dull whitish, blotched and splashed with light brown and lavender tints. Size .80 x .60. Made October 29, 1846. See 472.

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135—(554) **WHITE-CROWNED SPARROW**—*Zonotrichia leucophrys*—(Male)—It is a common migrant, arriving about the 10th of May and soon passing northward, returning towards the end of September, departing southward late in October; breeds in the far north. Known by the broad white crown, bordered on either side by black. Nests are built on the ground near the edges of woods. From four to six eggs, pale greenish blue, spotted with reddish brown and greyish. Size .90 x .65. Made in May, 1863. See 308, 477.

136—(558) **WHITE-THROATED SPARROW**—*PEABODY*—*Zonotrichia albicollis*—(Male)—Very abundant during the migrations and a regular though not a common summer resident in southern Ontario, where a few pairs always remain to breed. Arrives about the end of April, departs early in October. The most beautiful of sparrows, softly blended plumage and pure white throat, greyish breast and sides of the head. The lores are adorned with a bright yellow spot; their musical piping song is heard from hedge and wood. They lay three or four eggs in grass lined hollows on the ground or in thickets. Eggs are bluish white, spotted with brown size .85 x .62. Made in May, 1865. See 308.

137—(559) **TREE SPARROW**—*Spizella monticola monticola*—A common winter visitor; arrives early in October, departs late in April. Breeds from the northern limit of Ontario northward. They breed abundantly in Labrador and Hudson's Bay, placing their nests in hollows on the ground or moss. Three or four eggs, greenish white, speckled with reddish brown. Size .80 x .55. See 306.

138—(563) **FIELD SPARROW**—*Spizella pusilla pusilla*—Their high piping song is frequently heard on hot sultry days in summer. A common summer resident in scrubby fields in Southern Ontario; breeds throughout its range; arrives about the middle of April, departs early in October. Eggs laid in May or June are a pale bluish white, blotched with yellowish brown and greyish purple. Size .65 x .50. Made June 4th, 1863. See 309, 475.

139—(567) **SLATE-COLORED JUNCO**—*Junco hyemalis hyemalis*—A common resident, most abundant in spring and late autumn migrations; breeds throughout its range in the province. They place their nests on the ground, partially concealed by rocks, stumps, etc. They are made of grasses, lined with hair. Four or five greenish white eggs, speckled with reddish brown, with a wreath around the large end. Size .80 x .55. Made April 7th, 1864. See 308, 489.

140—(581) **SONG SPARROW**—*Melospiza melodia melodia*—A abundant summer resident; breeds throughout its range in the province; arrives about the middle of March, departs late in October. They are sweet and persistent songsters, frequenting gardens, roadsides and pastures. They conceal their nest (made of grass and weed stems, occasionally lined with horse hair) on the ground or in bushes. Eggs, three to five, greenish white marked, spotted and blotched with many shades of brown, two or three sets being laid during the season. Size .80 x .60. See 310, 474.

141 (584) **SWAMP SPARROW**—*Melospiza georgiana*—This is a dark colored sparrow. An abundant summer resident in marshes, breeding throughout its range in Ontario. It arrives about the middle of April, departs early in November. Owing to its shy habits, it is not commonly seen during the breeding season. Nest made of grasses, and on the ground, in places where the walking is extremely treacherous. Eggs greenish white, clouded with brown spots. Size .75 x .55. Made October 5th, 1845. See 310, 476.

142—(587) **TOWHEE**—*Pipilo erythrophthalmus erythrophthalmus*—(Male and female)—An abundant summer resident in the woods of Southern Ontario, and one which is extending its range as the land is brought into

cultivation. Breeds wherever it occurs in the province. Arrives about the end of April, departs early in October. While they are scratching among the leaves for food, they will utter their familiar "Tow-hee" or "Che-wink," and then again will mount to a tree or bush and sing their refrain. Their nest is on the ground or in low bushes, well lined with fine grasses. Eggs are pinkish white, with markings of light reddish brown. Size .90 x .70. See 316, 482.

143—(595) **ROSE-BREASTED GROSBEAK**—*Zamelodia ludoviciana*—(Male and female)—This is one of the most pleasing of our songsters. It is black and white, with rosy red breast and under wing coverts. Nests in bushes or low trees. Three or four eggs, laid in June, of a greenish blue, spotted heavily with reddish brown. Size 1.00 x .75. A tolerably common summer resident, breeding in the woods throughout its range in the province; arrives about the end of April, leaves early in October. Made August 15th, 1859. See 311, 485.

144—(598) **INDIGO BUNTING**—*Passerina cyanea*—(Male and female)—A common summer resident in Southern Ontario; arrives early in May, departs about the end of August. Its song is a sweet refrain. They nest in low bushes. Nest of grass and weeds, lined with fine grass or hair. Quite a substantial structure. Eggs pale bluish white. Size .75 x .52. Made in July, 1863. See 312, 481.

TANAGERS—Family Tanagridae.

145—(608) **SCARLET TANAGER**—*Piranga erythromelas*—(Male and female)—This beautiful scarlet and black bird is very quiet in actions, but its loud warbling song is heard at a great distance. It is a tolerably common summer resident, breeding throughout its range in the province; arrives early in May, and departs about the end of August. They nest upon horizontal limbs or forks, at elevations of four to twenty feet, making frail nest of twigs, rootlets and weeds. Eggs greenish blue, spotted with various shades of brown. Size .95 x .65. Made June 10th, 1859. See 313, 501.

SWALLOWS—Family Hirundinidae.

146—(613) **BARN SWALLOW**—*Hirundo erythrogastra*—(Male and female)—This swallow is the most beautiful and graceful of the family. It is a common summer resident, nesting in barns and outhouses throughout its range in the province; arrives about the end of April, departs early in September. Before the advent of civilized man they attached their nests to the sides of caves and crevices among rocks and in hollow trees. Eggs creamy white, spotted with reddish brown. Size .80 x .55. Made in June, 1863. See 314, 503.

147—(614) **TREE SWALLOW—WHITE-BREASTED SWALLOW**—*Iridoprocne bicolor*—(Male)—A vivacious, active species, resident during the summer, naturally nesting in trees or stumps, though large numbers take up their abode in houses provided for them by man. Nest of straw and grass, lined with feathers. Four to six white eggs. Size .75 x .50. Arrives quite early in April, departs about the end of September. Made May 5th, 1835. See 314, 506.

148—(612) **CLIFF SWALLOW**—*Petrochelidon lunifrons lunifrons*—(Male)—A regular summer resident, somewhat irregularly distributed, being abundant at some points and absent from others. Breeds in colonies. Arrives early in May; departs about the end of September. Easily recognized by their brownish throat and breast, white forehead and buffy rump. They build a flask-shaped structure of mud cemented to the face of a cliff or eaves of a building, the entrance being small, while the nest proper is large and rounded, and lined with grass and feathers. Eggs creamy white, spotted with reddish brown. Size .80 x .55. Made May 5, 1835. See 314

WAX WING—Family Ampelidae.

149—(619) **CEDAR WAXWING—CHERRY BIRD—***Bombycilla cedrorum*—A resident species, common, and generally distributed in summer, irregular in winter, its movements at that season depending on the food supply. They feed upon berries and insects, catching the latter in the air after the manner of the Flycatchers. Their notes are a strange hissing sound, often barely audible. Builds in orchards and groves in any kind of tree. The nests are made of grasses, strips of bark, moss, string, etc. Eggs dull bluish, or clayey brown, speckled with blackish brown. Size .85 x .60. Made March 2, 1862. See 315, 500, 554.

SHRIKES—Family Laniidae.

150—(621) **NORTHERN SHRIKE—***Lanius borealis*—Length ten inches. These are bold and cruel birds, feeding upon insects, small rodents and small birds. They have weak feet, and in order to tear their prey to pieces with their hooked bill they impale it upon thorns. A regular but not abundant winter visitor. The majority of them breed in the north, but nests have been found in various places in southern Ontario. Arrives in October; departs in April. The nests are found in thickets and tangled underbrush, and are made of vines, grasses and catkins. Four to six greyish white eggs, spotted with brown and amber. Size 1.05 x .75. Made October 23, 1865. See 316.

VIREOS—Family Vireonidae.

151—(624) **RED-EYED VIREO—***Vireosylva olivacea*—The most common of the Vireos and a persistent songster. Their eyes are brownish red. They swing their nests about ten feet from the ground, from the forks of trees in woods and orchards. The nests are made of strips of bark, fibre, etc., and have pieces of string or paper woven into the sides, and are among the most beautiful of bird homes. Three or four eggs, often accompanied by one of the Cowbird's, are laid in May or June; white, speckled with blackish brown. Size .85 x .55. The vireo breeds throughout its range in Ontario; arrives early in May, departs towards the end of September. Made in June, 1863.

152—(624) **RED-EYED VIREO—***Vireosylva olivacea*—A common summer resident in woods and orchards, nesting throughout its range in the province; arrives early in May, departs toward end of September. Made May 20, 1847. See 151, 317, 498.

153—(628) **YELLOW-THROATED VIREO—***Larivireo flavifrons*—A handsome bird, an uncommon summer visitor, which arrives about the beginning of May, departs early in September. They place their beautiful basket-like structure in forks of branches, adorning the outside with lichens, thus adding to the natural beauty of the nest. Four or five eggs, pinkish or creamy white, speckled about the large end with reddish brown. Size .80 x .60. Made in May, 1875. See 317.

WARBLERS—Family Mniotiltidae.

As a family they may be classed as the most beautiful and useful birds that we have. They feed upon small injurious insects. Their songs are simple but effective, and their nests of a high order of architecture.

154—(645) **NASHVILLE WARBLER—***Vermivora rubricapilla rubricapilla*—A common migrant, breeds sparingly in southern Ontario and no doubt regularly in the interior; arrives early in May, departs early in October. The nest of this small species is placed flush with the surface of the ground, covered with overhanging grasses, and is made of grass and nine needles. Eggs white, speckled with bright reddish brown. Size .60 x .45. Made May, 1875. See 319.

155—(636) **BLACK AND WHITE WARBLER**—*Mniotilta varia*—This striped black and white warbler is seen creeping about tree trunks and branches after the manner of the Nuthatch. They are active gleaners and of inestimable value to man, and are a common summer resident, breeding in woodlands throughout their range in Ontario; arriving early in May, departing early in September. They nest on the ground in woods or swamps. Nest of strips of bark and grass. Three to five eggs, white, speckled and wreathed with reddish brown. Size .65 x .50. Made May 29, 1845. See 318, 518.

156—(657) **MAGNOLIA WARBLER**—*Dendroica magnolia*—An abundant migrant, breeds from central Ontario northward; arrives early in May; departs about the end of September. One of the most beautiful of the warblers. Yellow breast and sides streaked with black. Builds in coniferous trees. Nest of rootlets and grass stems, lined with hair. Eggs dull white, speckled with pale red brown. Size .65 x .48. See 158, 323, 515.

157—(646) **ORANGE-CROWNED WARBLER**—*Vermivora celata celata*—A rare summer visitor. They have been found breeding about Hudson's Bay and in the Mackenzie River district, placing their nests in hollows on the ground, on the sides of banks or hills, concealed by tufts of grass or bushes. Eggs white, speckled with brown. Size .54 x .45. See 319.

158—(657) **MAGNOLIA WARBLER**—*Dendroica magnolia*—(Male). See 156, 523, 515.

159—(667) **BLACK-THROATED GREEN WARBLER**—*Dendroica virens*—(Female)—A common summer resident; arrives early in May, departs early in October. They are nearly always found in pines, with nests placed among the pine needles, where they are very difficult to locate. They lay in June, three to four white eggs, speckled with brown and lilac. Size .60 x .50. See 323.

160—(654) **BLACK-THROATED BLUE WARBLER**—*Dendroica caerulescens caerulescens*—(Female)—In migrations in southern Ontario they are common, breeding sparingly in the south and more abundantly in the interior. Arrives early in May, departs at the end of September. They nest in underbrush a few inches above the ground. Nest of bark strips, moss, and rootlets lined with fine grasses or hair. Eggs pale buffy white, dotted with pale brown. Size .65 x .50. See 320, 512.

161—(659) **NEST OF CHESTNUT-SIDED WARBLER**—*Dendroica pensylvanica*—One of the few warblers regularly breeding through their range in the Province of Ontario. Its nest, of grasses, weed stems and some fibres, is usually built in low bushes, within a few feet of the ground. The eggs are white or creamy white, speckled with brown and grey. Size .65 x .50. Made June 20, 1863. See 162, 322, 523.

162—(659) **CHESTNUT-SIDED WARBLER**—*Dendroica pensylvanica*—(Male)—The adults of this species may be known by the white underparts and the broad chestnut stripe on the flanks. The crown is yellow.

163—(660) **BAY-BREASTED WARBLER**—*Dendroica castanea*—This species is a regular but not a common migrant in the spring, rarely seen in autumn, breeds in the interior; arrives early in May, departs in September, has crown, throat and sides of a rich chestnut, forehead and face black, underparts white. Nests in coniferous trees in swampy places. Three or four eggs, white, spotted and blotched with red, brown, umber and grey. Size .70 x .50. Made May 20, 1875. See 322.

164—(662) **BLACKBURNIAN WARBLER**—*Dendroica fusca*—(Male)—Tolerably common in spring and autumn in southern Ontario, probably breeds in the interior; arrives early in May, usually when the apple trees

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are in bloom, departs at the end of September. Without exception this is the most exquisite of the family. The male can always be known by the bright orange throat, the upper part being largely black. Nests are placed on horizontal limbs of coniferous trees, constructed of rootlets, fine weed stalks, and grasses, lined with hair. Three to four eggs, greenish white, blotched with reddish brown and neutral tints. Size .70 x .48.

165—(671) PINE WARBLER—*Dendroica virens*—An irregular summer resident; arriving toward the end of April, and departing in September; generally found in pine woods, where they can be always located by their peculiar musical hissing trill. They nest high in the trees, building in a thick bunch of needles. Three or four dull whitish eggs, blotched with shades of brown and lilac. Size .68 x .52. See 321.

166—(674) OVEN-BIRD—*Seiurus aurocapillus*—An abundant summer resident in woods; arrives early in May; departs early in September. Is often known as the Golden-crowned Thrush because of its brownish orange crown bordered with black. They are woodland birds and nest on the ground, arching the top over with rootlets or leaves, the nest being made of grasses and leaf skeletons; four to six eggs, white, glossy and spotted, blotched or wreathed with reddish brown and lilac. Size .80 x .60. Made May 10th, 1863. See 318, 522.

167—(681) MARYLAND YELLOW-THROAT—*Geothlypis trichas* trichas—(Male and Female)—They are ground-loving birds and can be located by their loud unmistakable song, "Witchery, witchery, witch"; a common summer resident; arrives about the 10th of May; departs at the end of September. Breeds throughout its range in Ontario. They lay from three to five eggs, white, speckled about the larger end with red, brown and umber and with shell markings of stone grey. Size .70 x .50. Made May 20th, 1847. See 324.

168—(685) WILSON'S WARBLER—*Wilsonia pusilla pusilla*—(Male)—These handsome little black-capped, fly-catching warblers are abundantly found on the edge of woods and orchards. They are a regular migrant in spring and autumn, breeding in the interior. They nest on the ground. Nest is made of bark strips, fibres and leaves. Eggs are white, speckled with red brown. Size .60 x .50. Made in May, 1863.

169—(687) AMERICAN REDSTART—*Setophaga ruticilla*—(Male and Female)—A summer resident, breeding throughout its range in Ontario; arrives about the 10th of May; departs early in September. The male of this bird is black with a white belly and orange patches on the sides, wings and bases of outer tail feathers. They are abundant in swamps and woods, nest in trees, five to thirty feet above ground in an upright fork. The nests are compactly made of fibres and grasses felted together and lined with hair. Eggs are white, blotched with brown and grey. Size .65 x .50. See 170, 323, 511.

170—(687) AMERICAN REDSTART—*Setophaga ruticilla*—(Female).
WAGTAILS—Family Motacillidae.

171 (697) AMERICAN PIPIT—*Anthus rubescens*—The tit larks are abundant birds during migrations; more frequently seen in autumn than in spring. They are found in fields and cultivated ground. Breeds in the Arctic regions; arrives about the 10th of May; passes on northward very quickly. Early in September they return, and remain until the first week in November. Their nests are placed in the ground and are made of moss and grasses. Four to six eggs dark grey, heavily spotted with brown and blackish. Size .75 x .55. Made in October, 1853.

WRENS, THRASHERS, ETC.—Family Troglodytidae.

172—(704) **CATBIRD**—*Dumetella carolinensis*—(Male and Female)—This well known mimic, abundant in open woods, swamps and hillside. Is a very common summer resident; breeds throughout its range in Ontario. Arrives about the end of April; departs early in October. Their nests are low down in bushes or trees and are constructed of twigs and rootlets. A tangled mass of vines and briars is a favorite place for them to locate their home. Eggs three to five in number, bright bluish green in color. Size .95 x .70. See 327, 528.

173—(705) **BROWN THRASHER**—*Toxostoma rufum*—A common summer resident; breeds throughout its range in the province of Ontario. Arrives at the end of April, departs early in October. A large, handsome songster; nests near or on the ground, in hedge or thicket. Three to five eggs, greenish white, dotted with red brown. Size 1.05 x .80. Made in July, 1863. See 327, 531.

174—(722) **WINTER WREN**—*Nannus hyemalis hyemalis*—A summer resident; breeds throughout its range in the province; commonly in the interior and northward. The smallest of the wrens, four inches in length, a very short tail. They have a sweet song, not as loud as that of the House Wren. Nest in crevices or stumps, etc., made of twigs and leaves lined with feathers. Eggs pure white, finely and sparingly dotted with red brown. Size .60 x .48. See 328, 533.

175—(721) **HOUSE WREN**—*Troglodytes aedon aedon*—This familiar and noisy little wren, a common summer resident, builds in bird houses or any nook that may suit it. It arrives about the first of May; departs early in October. The eggs are pinkish white, minutely dotted with pale red brown, darker spots about the large end. Size .65 x .52. See 328, 532.

KINGLETS AND GNATCATCHERS—Family Sylviidae.

176—(749) **GOLDEN-CROWNED KINGLET**—*Regulus satrapa satrapa*—They are an abundant migrant and common winter resident, found in company with Chickadees, and may be seen hanging to twigs in all sorts of positions. Nest is large round structure of green moss, bark strips and fine rootlets, very thickly lined with soft feathers. They are placed in forks or partially suspended among the branches of spruce trees high above the ground; during June they lay from five to ten eggs, gray color, spotted with pale brown and lilac. Size .55 x .42. See 330, 539.

177—(749) **RUBY-CROWNED KINGLET**—*Regulus calendula calendula*—(Adult)—Abundant during spring and autumn migrations; probably breeds in the coniferous woods of the interior, as it is known to do in Nova Scotia. This little bird is 4.25 inches long and has a partially concealed patch of red on the crown. Four to nine eggs, creamy white speckled with red-brown. Size .56 x .44. See 178, 330, 541.

178—(749) **RUBY-CROWNED KINGLET**—*Regulus calendula calendula*—(Young)—Made Oct. 15, 1846. See 177, 330, 541.

NUT HATCHES—Family Sittidae.

179—(727) **WHITE-BREASTED NUTHATCH**—*Sitta carolinensis carolinensis*—These birds, common residents, are creepers and are able to run either up or down the trunks of trees. They nest in holes in trees, lining the cavity with bark strips and hair or feathers. Four to nine white eggs speckled with reddish brown and lilac. Size .89 x .60. Made Feb. 4, 1843. See 182, 329, 536.

180—(726) **BROWN CREEPER**—*Certhia familiaris americana* A common resident; breeds from southern Manitoba, central Ontario, southern Quebec and Newfoundland, southward. These peculiar weak-voiced creepers are common during the winter, when they may be seen working up the tree trunks. They build their nests of twigs, moss, etc., held together with cobwebs, under the loosened bark on coniferous trees. Eggs white, spotted with red brown. Size .58 x .48. See 328, 537.

181—(728) **RED-BELLIED NUTHATCH**—*Sitta canadensis* A resident species, but most frequently observed during the migrations. The breeding habits are the same as the white-bellied variety. They lay from four to six white eggs, spotted with reddish brown. Size .60 x .50. See 329, 543.

182—(727) **WHITE-BREASTED NUTHATCH**—*Sitta carolinensis* carolinensis. See 179, 329, 536.

183 (636) **BLACK AND WHITE WARBLER**—*Mniotilta varia*. See 155.

184 (735) **CHICKADEE**—*Parus atricapillus* These birds, very common residents, and among the most useful birds of the orchard, are favorites with everybody. They breed in holes in trees and in bird boxes, lining the cavities with fine grasses and feathers, and during May and June lay from five to eight white eggs, dotted with reddish brown. Size .55 x .45. See 329, 540.

THRUSHES, BLUEBIRDS—Family Turdidae.

185—(756) **VEERY—WILSON'S THRUSH**—*Hylocichla fuscescens* fuscescens. Made May 15, 1861. See 130, 331, 545.

186—(761) **AMERICAN ROBIN**—*Planesticus migratorius migratorius*—(Male and Young)—An abundant summer resident; breeding throughout its range in Ontario; arrives early in March. The bulk usually depart early in November, but some small flocks remain where food is plentiful, until severe frost comes, and a few always remain in sheltered spots all the winter. Their nests are made of grasses cemented together with mud and lined with finer grasses, firmly saddled in crotches of trees at any height. Eggs, greenish blue. Size 1.15 x .80. They raise several broods in a season. See 332, 549.

187—(766) **BLUEBIRD**—*Sialia sialis sialis*—(Male and female)—These birds build in cavities in trees (usually lower than twenty feet from the ground), bird boxes or any suitable nook, providing that English sparrows do not molest them. A common resident, breeding throughout its range. Arrive about the middle of March, depart towards the end of October. Several broods a year, commencing in April, are raised. Six pale bluish white eggs. Size .80 x .60. Made in May, 1875. See 332, 544.

188—(473) **SKYLARK**—*Alauda arvensis*—A common British bird and splendid songster, singing when soaring high in the air. Straggling casually to Greenland and Bermuda, this noted bird has been imported into parts of America, but is barely holding its own there. In Great Britain they nest on the ground in cultivated fields or meadows, laying from three to five greyish eggs, marked with brown, drab and lavender. Made April 28, 1837. See 295, 569.

189—(475) **MAGPIE**—*Pica pica hudsonia*—Mostly confined to the western country, from the Yukon, Saskatchewan and Winnipeg to New Mexico; rarely straggles eastward as far as Ontario, Hudson's Bay and Quebec. Length of bird twenty inches. They are well known as being great thieves. They nest in bushes and trees not far from the ground, making a large nest of sticks with an opening on the side, the interior made of weeds and mud lined with fine grasses. These nests reach a diameter of three feet. Eight greyish white eggs, spotted with brown and drab. Size 1.25 x .90. Made in 1836. See 453.

190 (493) **STARLING**—*Sturnus vulgaris*—Commonly and generally distributed in Great Britain it was liberated a number of years ago in Central Park, New York city, and has now become abundant there and is spreading slowly in all directions. They build their nests wherever they can find a sufficiently large crevice or opening, making them of straw, twigs and trash. Four to six pale bluish green eggs. Size 1.15 x .85. Two broods are reared in a season. Made in 1836. See 455.

191 (765) **WHEATEAR**—*Saxicola oenanthe oenanthe*—A British summer resident common on the South Downs of Sussex and Hampshire. Casual in Alaska in summer. They build in crevices, quarries or stone walls, making a nest of weeds, moss or grasses. Lay from four to six pale greenish blue eggs. Made in 1836. See 551.

EGGS OF CANADIAN BIRDS.

192 1. Brown Thrush 2 and 3. Meadow Lark 4. Whip-Poor-Will. 5. Red-winged Blackbird. 6. Towhee Bunting. 7 and 8. Unnamed. 9. Tawny Thrush.

Note—Nos. 7 and 8 are Warblers' eggs. It is impossible to recognize them from the drawing.

193 1. Grey Duck. 2. Wood Duck. 3. Woodcock. 4. Blue-winged Teal. 5. Cow Bunting. 6. Snow Finch. 7. Chipping Sparrow.

194 1. Tree Sparrow. 2. Blue Bird 3. Phoebe Flycatcher. 4. Killdeer Plover. 5. Killdeer Plover. 6. Kingbird. 7. Chipping Sparrow. 8. The Ruffed Grouse. 9. Warbler.

BRITISH BIRDS.

195 **BLACK-HEADED GULL**—*Larus ridibundus*—A European gull.

196 **POCHARD**—*Nyroca ferina*—A European duck, common in British waters.

197 **JACK SNipe**—*Limnocryptes gallinula*—A winter visitor to England, generally very abundant

198 **BULLFINCH**—*Pyrrhula pileata*—A tolerably common resident in some localities in England. Made Feb. 28, 1836.

199 **GOLDFINCH**—*Acanthis carduelis*—A resident of Great Britain and a favorite cage bird. Made in 1836. See 305.

200 **MARSH TIT**—*Parus palustris*—Tolerably common in the lowlands of England. Made March 26, 1837.

201 **LONG-TAILED TITMOUSE**—*Meclstura rosea*—A tolerably common British bird, famous for its beautiful nest. Made March 25, 1837.

202 **WOODLARK**—*Lullula arborea*—A generally distributed British bird, resident in the southern counties. Made Aug. 7, 1838.

203 **HEDGE SPARROW**—*Accentor modularis*—A very familiar British bird frequenting farms, orchards and gardens. Made Jan. 10, 1837.

204 **ROBIN**—*Erithacus rubecula*—The familiar Robin Redbreast of English song and story. It is very much smaller and quite a different type of bird from the American Robin, nearer the size of the ordinary English sparrow. These birds are very tame in England and are very common. Made Jan. 18, 1837. See 565.

205 **BLACKCAP**—*Sylvia atricapilla*—A summer resident of the southern counties of England—a famous songster. Made in April, 1837.

206—**NIGHTINGALE**—*Luscinia megarhynchos*—Found throughout southern Europe and southwestern Asia, wintering in Africa. Tolerably common summer resident of the southern counties of England, and one of the most famous bird songsters. See 571.

207—**RED WING**—*Turdus iliacus*—A winter visitor to Great Britain, sometimes appearing in vast numbers.

208—**BLACKBIRD**—*Turdus merula*—A common resident of Britain. Made in 1836.

209—**STOAT**—*Mustela erminea*—Common in Britain. Made in 1836.

210—**MISSAL THRUSH**—*Turdus viscivorus*—Tolerably common in some parts of Great Britain, but not generally distributed.

211—**SONG THRUSH**—*Turdus musicus*—A common resident of Great Britain and fine songster. Made March 6, 1837.

EGGS OF BRITISH BIRDS.

212—1, Land Rail. 2, Starling. 3, Blackbird. 4, Thrush. 5, Blackbird. 6, Jay. 7, Missal Thrush. 8, Missal Thrush. 9, Turtle Dove.

213—1, Chaffinch. 2, House Wren. 3, Robin. 4, House Sparrow. 5, House Sparrow. 6, Unnamed. 7, Hedge Sparrow. 8, Nightingale. 9, Redstart. 10, Grosbeak. 11, Blackcap. 12, Unnamed. 13, Redbacked Shrike. 14, Unnamed. 15, Greenfinch. 16, Goldfinch. 17, Skylark. 18, Wryneck. 19, Unnamed. 20, Unnamed. Note Nov. 6, 12, 14, 19 and 20 are impossible to recognize from the drawing.

MAMMALS IN COLLECTION.

214—**VARYING HARE—WHITE HARE**—*Lepus americanus*—An animal of the woods. Wherever any extent of thick cover remains this hare may still be found in considerable numbers. The varying hare is remarkable for the seasonal change which takes place in the color of its fur. In summer it is a dark reddish brown. In winter it becomes white. The hare does not live in burrows like the rabbit, but only makes a slight depression in the ground. They are born with their eyes open and covered with hair, and for four or five weeks they remain under the care of their mother, but after that time they depend upon themselves for their subsistence.

215—**VARYING HARE—WHITE**—*Lepus americanus*—Changing from summer to winter coat.

216—**MUSKRAT**—*Ondatra zibethica*—It is common everywhere in Ontario, about marshes, rivers and streams; in marshes it builds houses for winter protection. Muskrat's fur, when in prime condition, is of high quality, and if it were not so common would be more valued than it is at present. The length of the muskrat is a little over two feet. The nest is composed of sedges, water lily leaves and similar plants. The hind feet of the muskrat are well webbed, and its food is largely vegetable. Made in 1847.

217—**MASKED SHREW**—*Sorex personatus*—Common and generally distributed, resembling the mouse in general form. The fore feet are small, the hind ones larger, and the tail shorter than the body. It is found in burrows or among heaps of stones, or in holes made by other animals. They feed on insects and grain. One species of the shrew family enjoys the reputation of being the smallest living mammal. It is but an inch and a half, with a tail an inch in length.

218—**WHITE-FOOTED MOUSE**—*Peromyscus leucopus*—Common and generally distributed throughout Ontario.

219 **MEADOW MOUSE—FIELD VOLE**—*Microtus pennsylvanicus*—Common everywhere and the most destructive animal we have.

220—**WOODCHUCK—GROUND HOG**—*Arctomys menax*—The Woodchuck belongs to the Marmots. It is common and generally distributed sufficiently abundant in some localities to be a nuisance in the fields, for it is an expert excavator and digs very large and complicated burrows. The tunnel which leads to these chambers is only large enough to admit the body of the animal. They close up the entrance of the burrows with grass and earth and enter into a lethargic hibernating state in the winter.

221 **GREY SQUIRREL—BLACK SQUIRREL**—*Sciurus carolinensis*—Formerly abundant in all the hardwood forests of southern and western Ontario, but the destruction of the woods and constant persecution have sadly reduced their numbers. Specifically the grey and the black forms are identical. Squirrels are furnished with long finger-like toes upon the fore feet, are armed with sharp, curved claws, in order to enable them to maintain a firm clasp upon the branches and bark of trees. The nest of the squirrel is placed on the fork of some lofty branch or in the hollow of a decayed tree concealed from sight. It is made of leaves, moss and grass woven together so as to be rain and windproof. A pair of squirrels will go back to the same nest year after year. Its food consists of nuts, acorns and other fruits and seeds. In autumn it hides its food in all kinds of nooks and crevices near the tree in which it lodges.

222—**RED SQUIRREL**—*Sciurus hudsonicus*—Common everywhere in the province.

223—**FLYING SQUIRREL**—*Sciuropterus volans volans*—Common in Ontario, but not often seen, as it is nocturnal in its habits, seldom venturing until after sunset from its retreat in some hollow tree. The flying squirrel possesses a parachute flying membrane. When it intends to leap it stretches its limbs to their fullest extent, and is up-borne through the air by the delicate fur-clad membrane which extends along its sides.

224—**SKUNK**—*Mephitis mephitis*—The Skunk, common and generally distributed, is about eighteen inches in length, has short legs and a body that is broad and flat. It lives upon small animals, insects, eggs and wild fruits; is usually met with in the early morning or evening twilight, and the observer would be wise to let the animal pass unmolested. The fur is valuable and beautiful.

225—**MINK**—*Mustela vison*—It frequents the banks of ponds, lakes and rivers. Its food consists of small animals, fish, frogs, crawfish and aquatic insects. The feet are adapted for swimming, being webbed between the toes. Its fur, which is beautiful and valuable, bears a great resemblance to that of the sable. Made in 1860.

226—**CANADA LYNX**—*Lynx canadensis*—Now only found in the forested districts, its range extending north nearly to the timber line. The limbs of the Lynx are very powerful and the thick, heavy feet are furnished with strong white claws that are not seen unless stretched out. It feeds on small quadrupeds, such as the hare, etc. The ears are erect and tipped with a long pencil of black hair. The Lynx, which is a good swimmer, may be distinguished by its peculiar gait.

End of Paper series

Twelve - prints

35

227 (2) **HOLBOELL'S GREBE**—*Colymbus holboelli*. The large size of this Grebe will distinguish it at once from our other species. See 1.

(3) **HORNED GREBE**—*Colymbus auritus*. This bird is also called Hell Diver, Pink-eyed Diver, Dipper and Water-witch. See 23, 334.

(6) **PIED-BILLED GREBE**—*Podilymbus podiceps*. The note of this bird is a resonant cull, reminding one of the Yellow billed Cuckoo note. It is composed of the syllables cow-cow, repeated several times, the last syllables being drawn out into frog-like gutturals. See 4, 339.

228 (7) **COMMON LOON**—*Gavia immer*. Range: North America, north of Mexican boundary, breeding from the northern parts of the United States to northern Canada. The common Loon may be known in summer by the entirely black head and neck, with the complete ribbon of black and white stripes encircling the lower neck and throat. The back is spotted with white. Length 31 to 36 inches. See 337.

(9) **BLACK-THROATED LOON**—*Gavia arctica*.—Range from north in United States northward, breeding along the Arctic coast. This species is known by the grey crown and white streaks down the back of the neck; it is smaller than the common Loon. Length 27 to 30 inches. Eggs have an olive tint, the majority of the spots being at the larger end. Size 3.10 x 2.00.

(11) **RED-THROATED LOON**—*Gavia stellata*. The bill of the Red-throated Loon is more slender than in the other species. See 5.

PUFFINS, AUKS AND MURRES—Family Alcidae.

Accidental visitors to Ontario. Puffins, Auks and Murres are all sea birds and are only found inland when blown there by some severe storm of water. They may be recognized from the fact that they have but three toes, which are webbed. They stand upright on the sole of the foot, and are able to walk quite easily on land.

229 (13) **PUFFIN**—*Fratercula arctica arctica*.—The eggs of these birds are of commercial value, and are gathered in immense numbers on the rocky islands of Great Britain and Norway. They breed in large numbers on Bird Rock in the Gulf of St. Lawrence. But a single egg, dull white, is laid. Size 2.50 x 1.75.

(27) **BLACK GUILLEMOT**—*Cephus grylle*. Range: Coasts and islands of North Atlantic, breeding from Maine northward to southern Greenland. A specimen in the mottled plumage was taken in Lake Ontario in February, 1888. The eggs are pale bluish or greenish white, with markings of brown and black. Two eggs laid in cavity of a large boulder; no nest. Size 2.40 x 1.60.

(31) **BRUNNICH MURRE**—*Uria lomvia*.—Range: North Atlantic coast. This species, known as the Thick-billed Guillemot, is the commonest species of the Auk family. Single egg, laid on edge of cliff. The length of this bird is 16.5 x 16.8 inches. See 333.

(32) **RAZOR-BILLED AUK**—*Alca torda*. Range: North Atlantic coast, breeding from Bird Rock northward. Length of bird 16 x 18.5 inches. One egg, white, grayish or buffy. Size 3.00 x 2.00.

(34) **DOVEKIE**—*Alle alle*. Range: Coast and islands of North Atlantic and East Arctic oceans. This little Dovekie, or Sea-Dove, is the smallest member of the family, being only 8 inches in length. It sometimes straggles up the St. Lawrence to Lake Ontario. There is one record for Toronto, November 18th, 1901. See 336.

LONG WINGED SWIMMERS—ORDER II.—LONGIPENNES.

SKUA AND JAEGERs—Family Stercorariidae.

Skua and Jaegers are birds having a Gull-like form with a hooked bill, the base of which is covered with a scaly shield. They are able to swim and dive and get their living by preying upon the Gulls and Terns. The Jaeger is one of the swiftest and most graceful of flying birds.

230—(35) **SKUA**—*Megalestria skua*—A rare visitor to Ontario. A specimen was secured on the Niagara River in the spring of 1886. Length of bird 20 to 22 inches. Breeds in Ireland and Hudson's Strait. The nest is a hollow in the ground, lined with grass. Two eggs, olive green, spotted with brown. Size 2.75 x 1.90.

(36) **POMARINE JAEGER**—*Stercorarius pomarinus*—Range—Northern hemisphere. Breeding within the Arctic circle. It is a rare visitant to the Great Lakes. Two eggs, olive brown or greenish, and spotted with black. Size 2.20 x 1.70.

(37) **PARASITIC JAEGER**—*Stercorarius parasiticus*—They locate their nests in the highest parts of marshy places. Two eggs, olive green or brown. Size 2.15 x 1.65.

(38) **LONG-TAILED JAEGER**—*Stercorarius longicaudus*—The largest of the Jaegers, being from 17 to 23 inches long. This is due to the central tail feathers, which extend about eight inches beyond the others. Size of eggs 2.10 x 1.50.

231—(42) **GLAUCOUS GULL**—*Larus hyperboreus*—An uncommon but regular winter visitant to the shores of Ontario. One of the largest of the Gulls, being 28 inches in length. A powerful bird, preying upon smaller Gulls. Its bulky nest is made of seaweed, grass and moss. Two to three eggs, light drab, spotted with brown. Size 3.00 x 2.20.

(47) **GREAT BLACK-BACKED GULL**—*Larus marinus*—This bird is a common winter visitant on our shores, but is chiefly a maritime species. The largest of the Gulls, thirty inches long, and unlike any others. Eggs are greyish, spotted with brown and lilac. Size 3.00 x 2.15.

(51) **HERRING GULL**—*Larus argentatus*. See 6.

(54) **RING-BILLED GULL**—*Larus delawarensis*—On Lake Ontario it is fairly abundant as a spring migrant. Length of bird 18 to 20 inches. Three eggs, greyish brown and lilac. Size 2.80 x 1.75. See 347.

232—(39) **IVORY GULL**—*Pagophila alba*—Range—Arctic regions to southern Ontario in winter. The little Snow Gull, as it is often called, is 15 to 19 inches in length. Eggs are olive.

(40) **KITTIWAKE**—*Rissa tridactyla*—Breeds from Gulf of St. Lawrence to 80° north latitude. Its name is derived from the call notes resembling the syllables kitti-aa, kitti-aa. Nest is of seaweed and moss on ledge of cliff. Eggs, buff or brown, grey spotted. Size 2.25 x 1.60. See 340.

(58) **LAUGHING GULL**—*Larus atricilla*—Nests in thousands off the Gulf coast and along the south Atlantic States. Its call is a long-drawn, clear note in a high key, imitated by the syllables hah—ha—ha-ha-ha. Eggs 2 to 5 in number; dark green, spotted with dull lilac. Size 2.12 x 1.55.

(60) **BONAPARTE'S GULL**—*Larus philadelphia*. See 7, 8, 346.

(62) **SABINE GULL**—*Xema sabini*—This beautiful Arctic species is recognized by its forked tail and peculiar wing pattern. It is rare in Ontario.

233—(63) **GULL-BILLED TERN**—*Gelochelidon nilotica*—This southern species is an accidental summer visitor on the Canadian coast. It is one of the largest of the Terns, being from 15 to 17 inches long.

(69) **FORSTER'S TERN**—*Sterna forsteri*—This species breeds in the St. Clair flats and on some of the islands in Lake Erie. Three eggs in hollow on grass bank. They are buffy, spotted with dark brown and lilac. Size 1.80 x 1.30.

(70) **COMMON TERN**—*Sterna hirundo*—This Tern formerly bred on the Canadian shore of Lake Erie, not far from Buffalo. It is a fairly common transient visitant, especially on the Great Lakes, but is not known to breed within our limits, except on the sea coast from the Gulf to Greenland. See 348.

(71) **ARCTIC TERN**—*Sterna paradisaea*—Breeds northward to unknown latitudes; rare on the Great Lakes.

(72) **ROSEATE TERN**—*Sterna dougalli*—This Tern is an accidental visitant. Ranges from New England to the Gulf.

(74) **LEAST TERN**—*Sterna antillarum*—These little Sea Swallows are the smallest of the Tern, being but 9 inches in length. They inhabit tropical and temperate North America, and are rare migrants on the coast.

(75) **SOOTY TERN**—*Sterna fuscata*—Range—Tropical America, north to the south Atlantic States. It is an accidental visitant on the inland waters.

(80) **BLACK SKIMMER**—*Rynchops nigra*—This is a family of very few species, confined mostly to the tropical regions.

234—(64) **CASPIAN TERN**—*Sterna caspia*—The largest of the Tern family; from 20 to 23 inches in length. It breeds south of us, and far northward, and is known on the Great Lakes. See 341.

(65) **ROYAL TERN**—*Sterna maxima*—This is a tropical species and an accidental visitor on our coast.

(77) **BLACK TERN**—*Hydrochelidon nigra surinamensis*. See 9, 342

235—(117) **GANNET**—*Sula bassana*—The Gannet or Solan Goose inhabits the north Atlantic, breeding on rocky cliffs from Nova Scotia northward. They feed on fish, which they secure by diving from a height in the air and pursuing under water.

(119) **CORMORANT**—*Phalacrocorax carbo*—Range—Atlantic coast, breeding from Maine to Greenland and rarely found in the interior, occurring as a transient visitor to Ontario.

(120) **DOUBLE CRESTED CORMORANT**—*Phalacrocorax auritus*—An Ontario bird. See 10, 344.

236—(129) **AMERICAN MERGANSER**—*Mergus americanus*—This species is almost exclusively fish eating, and, therefore, the flesh is unpalatable. It is often called Saw-bill, and is common in Ontario.

(130) **RED-BREASTED MERGANSER**—*Mergus serrator*—One of the most abundant species along the coast and on inland waters. Very common on Lake Ontario in the months of April and May. See 351.

- (153) **BUFFLE-HEADED DUCK**—*Charitonetta albeola*. See 35, 36, 360.
- (167) **RUDDY DUCK**—*Erismatura jamaicensis*. See 42, 43, 362.
- 227 (131) **HOODED MERGANSER**—*Lophodytes cucullatus*.—Common in Ontario, and inhabits sluggish, wooded ponds and streams, consequently doing less harm as a destroyer of fish than the other Mergansers. Lives on aquatic insects and vegetable food. Its flesh is edible, and on account of its beautiful plumage it is encouraged to live within our borders. Ten to twelve greyish eggs. Size 2.15 x 1.70. See 353.
- 238—(132) **MALLARD**—*Anas platyrhynchos*. See 12, 13, 349.
- (133) **BLACK DUCK**—*Anas rubripes*. See 14, 15, 356.
- (135) **GADWALL**—*Chaulelasmus streperus*. See 16, 17.
- 239—(136) **WIDGEON**—*Mareca penelope*. See 18.
- (137) **BALDPATE**—*Mareca americana*. See 19, 363.
- (139) **GREEN-WINGED TEAL**—*Nettion carolinense*. See 20, 350.
- 240—(140) **BLUE-WINGED TEAL**—*Querquedula discors*. See 21.
- (142) **SHOVELLER DUCK**—*Spatula clypeata*—The Shoveller or Spoon-bill Teal. See 22, 564.
- (144) **WOOD DUCK**—*Aix sponsa*.—It is common on the cranberry marshes, Lake Restoul, and neighboring water in Parry Sound district. Easily domesticated and breed in captivity. See 25, 352.
- 241—(143) **PINTAIL**—*Dafila acuta*.—Like the Mallard and Baldpate, it comes into shallow waters at dusk, to feed on aquatic weeds and insects. Its notes are low and soft and seem to flow from deep down in the throat. See 23, 24.
- 242—(146) **REDHEAD**—*Marila americana*. See 26, 358, 557.
- (147) **CANVAS-BACK**—*Marila valisineria*. See 28, 359.
- 243—(148) **SCAUP DUCK**—*Marila marila*. See 29, 30.
- (149) **LESSER SCAUP DUCK**—*Marila affinis*.—The Lesser Scaup, or Little Blue Bill, is an abundant migrant on the waters of Ontario; and frequently found on smaller ponds and streams. Markings similar to the Greater Scaup, the gloss of the head purplish instead of greenish. See 361.
- (150) **RING-NECKED DUCK**—*Marila collaris*. See 31, 32.
- 244—(151) **AMERICAN GOLDEN-EYE**—*Clangula clangula americana*.—A peculiar whistling sound made by the Golden-eye when in flight is a characteristic. See 33, 34, 365.
- 245—(155) **HARLEQUIN DUCK**—*Histrionicus histrionicus*.—The Harlequin is an Arctic species of rare occurrence during winter. It visits the Great Lakes occasionally; specimens have been taken near Toronto. A beautiful and gorgeous bird in the oddity of the markings. They breed mostly in single pairs, along swiftly running streams.
- (160) **AMERICAN EIDER**—*Somateria dresseri*.—This Eider is best determined by the angle and feathering on the sides of the bill. It nests from Labrador to Maine and is a rare visitor to Ontario.

(162) **KING EIDER**—*Somateria spectabilis*—May be considered a regular winter visitor to the Great Lakes; common in the winter of 1879 on Lake Erie. Its breeding range extends from the Gulf of St. Lawrence northward. The female lines her nest with down as do the other species of Eider, thus furnishing the famous eiderdown of commerce, which is gathered by the natives of Iceland, Greenland and Norway.

246—(154) **OLD SQUAW**—*Harelda hyemalis*. See 37.

(163) **AMERICAN SCOTER**—*Oidemia americana*—This species and the next are abundant on Lake Erie in October and occur in large flocks. See 38.

(165) **WHITE-WINGED SCOTER**—*Oidemia deglandi*—It is the only Scoter which is common on the interior lakes in the spring, and is often seen in large flocks during late May, when the males are in perfect plumage. Breeds from Dakota and southern Labrador to the Arctic coast, wintering from the Gulf of St. Lawrence and the Great Lakes to South Carolina. See 364.

(166) **SURF SCOTER**—*Oidemia perspicillata*. See 40.

247—(169a) **GREATER SNOW GOOSE**—*Chen hyperboreus nivalis*—This Goose is enormously abundant on the shores of Hudson's Bay during spring migration, breeding in the Arctic regions, and wintering chiefly on the Atlantic coast, south to Cuba. The length of the bird is from 27 to 31 inches; the eggs, number 5 to 8, are cream colored. Size 3.40 x 2.40.

(169.1) **BLUE GOOSE**—*Chen caerulescens*—The Blue-winged, or White-headed Goose, as this bird is called by gunners. Its habits resemble those of the Snow Goose. Lays 4 to 8 eggs, of a brownish buff color. Size 2.50 x 1.75.

(171a) **AMERICAN WHITE-FRONTED GOOSE**—*Anser albifrons gambeli*—Breeds on the Arctic coast, Alaska and west coast of Greenland, and winters chiefly in Texas and Mexico. From 4 to 9 eggs, having a dull buff ground, are laid. Size 3.00 x 2.05.

248—(172) **CANADA GOOSE**—*Branta canadensis*—This wild Goose is probably the best known of all the water fowl in Ontario. See 44, 366.

(173) **BRANT**—*Branta bernicla glaucogastra*—The Brant differs from the Canada Goose in having a black breast and lacking the white patch across the throat and sides of the head. The summer home of this species is on the west coast of Greenland. A favorite game bird.

(174) **BLACK BRANT**—*Branta nigricans*—This species is like the last, except that the black extends on the under parts. Its summer home is on the coast of northeastern Siberia and Alaska. Winters on the shores of the Pacific. It is an accidental visitant to Ontario. Lays from 4 to 8 greyish colored eggs. Size 2.80 x 1.75.

(180) **WHISTLING SWAN**—*Olor columbianus*—Range—North America, breeding in the Arctic circle and wintering south to the Gulf of Mexico. It is a spring and fall migrant, both on the coast and the interior lakes of Ontario. It is nearly 5 feet in length. On March 14th, 1908, three hundred and fifty swans lit on the Niagara River, and more than one hundred of them were swept over the falls; many would have survived but were killed by clubs and guns. Eggs, of a greenish or brownish buff color, number from 3 to 6. Size of eggs 4.00 x 2.75.

249—(190) **AMERICAN BITTERN**—*Nautaurus lentiginosus*—It arrives about the first of April, and its common pumper-lunk is heard in the marshes of Ontario until November. The eggs are from 3 to 5 in number, a brownish drab color. Size about 2 inches in length and 1.5 in lesser diameter. Its food consists of frogs and small animals. See 369.

(191) **LEAST BITTERN**—*Ixobrychus exilis*. See 46, 373, 556.

(201) **GREEN HERON**—*Butorides virescens*—The little Green Heron, Fly-up-the-creek, or Chalk-line, is the most familiar member of this family in most parts of Ontario, as it is found along the small streams and ponds as well as the swamps and lakes. Feeds principally on frogs, minnows and crawfish. Has a shriller but less hoarse voice than the other Herons. The nest is placed in an alder, willow or thorn tree not far from the creek, and usually fifteen feet from the ground. Eggs 3 to 6 in number, pale greenish. Size 1.38 x 1.12 inches. See 368.

250—(194) **GREAT BLUE HERON**—*Ardea Herodias*. See 47, 375.

(196) **AMERICAN EGRET**—*Herodias egretta*—This species inhabits tropical and temperate America, and after the breeding season straggles northward to Manitoba and Nova Scotia. An occasional summer visitor to Ontario. The length of the bird is from 36 to 42 inches. They breed in impenetrable swamps; where they numbered thousands years ago, they can be counted by dozens now. Eggs number from 3 to 5; are a light bluish green. Size 2.25 x 1.45.

(202) **BLACK-CROWNED NIGHT HERON**—*Nycticorax nycticorax naevius*—Range—North America from southern British provinces, southward. Winters along the Gulf coast and beyond. It is well known in Ontario, and its hoarse cry has given it the common name of Quawk. Its nest is placed well up towards the tops of trees. Eggs number 3 to 5, of a pale bluish green. Size 2.00 x 1.40. See 371.

(206) **SAND HILL CRANE**—*Grus mexicana*—Range—Temperate North America, breeding from the Gulf States, locally, north to the southern parts of the British provinces. Nests found in marshy places. Two eggs; size 3.75 x 2.40. See 378.

251—(208) **KING RAIL**—*Rallus elegans*—Range—Fresh water marshes of eastern United States, from New England and the Dakotas southward. One of the largest Rails, 17 inches in length. It is a fairly common summer resident on our marshes; but on account of its extreme shyness is rarely seen. Lays from five to twelve eggs, of a cream colored ground, sparingly speckled with brown and lilac. Size of eggs 1.60 x 1.20. See 383, 555.

(211) **CLAPPER RAIL**—*Rallus crepitans*—The Clapper Rail, Salt-water Marsh Hen, or Mud Hen, inhabits the grassy salt marshes of Long Island. It is very limited in Ontario. The eggs are from 7 to 12 in number. Color buff clay white, spotted with reddish brown. Size 1.72 x 1.20 inches.

(212) **CIRGINIA RAIL**—*Rallus virginianus*. See 48.

252—(214) **CAROLINA RAIL OR SORA**—*Porzana carolina*. See 49, 380.

(215) **YELLOW RAIL**—*Coturnicops noveboracensis*—The Yellow Rail inhabits eastern North America, north to Nova Scotia, Hudson's Bay and Slave Lake; also British Columbia. It is a regular migrant to Ontario and can be looked for from the first of May to the first of October. When surprised it utters a long call, Kik-kik-kik-kik-queah. Eggs, buff color, speckled with reddish brown. Size 1.10 x .80. See 377.

253--(218) **PURPLE GALLINULE**—*Ionornis martinica*—This is a species of tropical America, wandering northward to Ontario and Nova Scotia. Nests in rushes; six to ten eggs of a creamy pale buff, blotched with chestnut. Size 1.60 x 1.15. See 385.

(219) **FLORIDA GALLINULE**—*Gallinula galeata*. See 50, 379, 562.

(221) **AMERICAN COOT**—*Fulica americana*. See 51, 381.

254--(222) **RED PHALAROPE**—*Phalaropus fulicarius*—The female Phalarope is larger and more brightly colored than the male. She does the courting and turns over the duties of incubation to the male. See 52.

255--(223) **NORTHERN PHALAROPE**—*Lobipes labatus*—Breeds in high northern latitudes and migrates southward in winter. It is our smallest and commonest Phalarope, occurring with considerable regularity, both on the ocean and inland waters. Nests in hollows on the ground lined with a few grasses. Eggs are 3 to 4 in number, generally of a greenish buff color, spotted and blotched with brown and blackish.

256--(224) **WILSON'S PHALAROPE**—*Steganopus tricolor*—The Wilson's Phalarope is a nearctic species, inhabiting the interior of the United States and Canada, north to the Saskatchewan and Hudson's Bay, and wintering from Texas to Patagonia. Eggs and nest similar to the preceding. See 382, 563.

257--(228) **AMERICAN WOODCOCK**—*Philohela minor*—It is fast disappearing from the more inhabited districts on account of the incessant slaughter in the open season. See 53, 388.

258--(230) **WILSON SNIBE**—*Gallinago delicata*—The dark striped back, long bill and white belly can be seen by a quick eye as the snipe springs from his grassy coverts in the swamp. His rapid zig-zag flight and a sharp grating call of scarp, scarp, are quite distinctive. See 54, 389.

259--(231) **DOWITCHER**—*Macrorhamphus griseus*. See 55.

(233) **STILT SANDPIPER**—*Micropalama himantopus*—Breeds in the Arctic regions, and winters from the Gulf States southward. This species often wades in shallow water while feeding. Its nesting habits are the same as those of the majority of the members of the family. The three or four eggs are buffish or greyish, blotched with shades of brown. Size 1.40 x 1.00.

(234) **KNOT**—*Tringa canutus*—Red-breasted Sandpiper, or Robin Snipe, breeds in the Arctic regions of both hemispheres, and migrates along our coasts and inland waters, wintering from the Gulf coast to South America. They feed along the beach and mud flats. No authentic eggs are known at present to exist in collections.

(243a) **RED-BACKED SANDPIPER**—*Pelidna alpina sakhalina*. See 58.

(248) **SANDERLING**—*Calidris leucophaea*—The Sanderling is the most widely ranging of our shore birds, breeding in the northernmost portion of the Holarctic region, and migrating southward in winter, searching nearly all parts of the world in its wanderings. It is common in the fall along the coast and the Great Lakes. Three or four eggs, greenish buff, spotted with brown. Size 1.45 x .95. See 260.

(283) **RUDDY TURNSTONE**—*Arenaria interpres morinella*—The Turnstones are a family of three or four species, related to Plovers and Oystercatchers. Their common and scientific names refer to the habit of turning

over stones in search of insects. Primarily a beach bird and a maritime species visiting our inland stations when taking a short route from the Atlantic coast to Hudson's Bay. The eggs, 4 in number, are peculiar and beautiful; light-greyish or cream-colored ground, marbled with many shades of brown and lilac. Size 1.65 x 1.10.

260—(231) DOWITCHER—*Macrorhamphus griseus*. See 55, 259.

(233) STILT SANDPIPER—*Micropalama himantopus*. See 259.

(234) KNOT—*Tringa canutus*. See 259.

(235) PURPLE SANDPIPER—*Arquatella maritima*—The Purple Sandpiper, or Rock Sandpiper, prefers a rugged coast. It is a maritime species, and occurs rarely on the Great Lakes and other inland waters. It has been taken on Lake Ontario and at Toronto, November 3rd, 1900. Four eggs of greyish buff, splashed with shades of brown and grey.

(243a) RED-BACKED SANDPIPER—*Pelidna alpina sakhalina*. See 57, 58, 259.

(248) SANDERLING—*Caligis leucophaea*. See 259.

261—(239) PECTORAL SANDPIPER—*Pisobia maculata*. See 56.

(240) WHITE-RUMPED SANDPIPER—*Pisobia fuscicollis*—Fairly common in the fall along the coast and Great Lakes. Breeds within the Arctic circle and winters in the West Indies to South America. It is a gentle bird and often allows one to approach within a few feet of it. Three or four eggs, which cannot be distinguished from the following species. Size 1.30 x .90.

(241) BAIRD'S SANDPIPER—*Pisobia bairdi*—The Baird Sandpiper is a fairly common transient species, migrating through the interior of North America to Chili and Patagonia.

(242) LEAST SANDPIPER—*Pisobia minutilla*—Our smallest Sandpiper; a common migrant along our coasts and inland waters. It utters a mellow peep, peep or peet, peet, and breeds from the Gulf of St. Lawrence to the Arctic regions.

(246) SEMI-PALMATED SANDPIPER—*Ereunetes pusillus*. See 59.

262—(254) GREATER YELLOW-LEGS—*Totanus melanoleucus*. See 61.

(255) LESSER YELLOW-LEGS—*Totanus flavipes*—This species breeds in the Arctic regions and migrates southward. Much less common in the spring than in the fall. Its habits are similar to those of the Greater Yellow-legs, but it is less suspicious. It travels in large flocks. The flesh does not compare favorably with that of the Snipe and larger Sandpipers. See 59.

(256) SOLITARY SANDPIPER—*Melodromas solitarius*. See 63.

(263) SPOTTED SANDPIPER—*Actitis macularia*. See 64.

263—(249) MARBLED GODWIT—*Limosa fedoa*—Godwits are large Plovers with long, slightly upcurved bills. The Marbled Godwit, or Brown Marlin, breeds from Nebraska to Saskatchewan. Winters in the West Indies and Central America. It was formerly a regular spring and fall migrant, but is now a rare visitant or straggler.

(251) **HUDSONIAN GODWIT**—*Limosa haemastica*—Hudsonian Godwit, or Ring-tailed Marlin, breeds in Arctic America, migrating southward along the Atlantic coast, and wintering in South America. These birds are highly prized by epicures. Their nesting grounds are practically beyond the interference of man.

(264) **LONG-BILLED CURLEW**—*Numenius americanus*—The Long-billed Curlew, or Sickle Bill, breeds in the interior of America as far north as Manitoba and Saskatchewan, and winters on the Gulf coast and West Indies. Three or four eggs, of a buff or greenish buff color, covered with spots of brownish black. Size 2.50 x 1.80. See 394.

(265) **HUDSONIAN CURLEW**—*Numenius hudsonicus*—It breeds in the Arctic region and winters from the Gulf coast to Patagonia. It is less common in the interior than along the coast. Like the Long-billed Curlew, it exhibits much sympathy for wounded companions, often sacrificing its life by returning an answer to their cries. This is a much smaller bird than the Long-billed Curlew.

(266) **ESKIMO CURLEW**—*Numenius borealis*—The Eskimo Curlew, Dough bird, or Fute, was formerly a regular fall migrant, nesting in the Arctic regions and wintering in South America. Many believe this species to be practically extinct now, although a few years ago it was most abundant. Being, however, the most unsuspicious of the shore birds, it would allow the near approach of gunners, with the inevitable result.

264—(258) **WILLET**—*Catoptrophorus semipalmatus*—The Willet inhabits the Atlantic from Florida to southern New Jersey, and rarely to the coast of Maine. There is one record, Lake Ontario, Sept. 12th, 1885.

(261) **BARTRAMIAN SANDPIPER, OR UPLAND PLOVER**—*Bartramia longicauda*—The Upland Plover, as the sportsmen call it, is a summer resident of Ontario; it is a Nearctic species, breeding from Virginia to Nova Scotia and Alaska. This beautiful bird mounts high in the air and utters a prolonged, mournful, mellow whistle in the mating season, more like the wind than the voice of a bird. It is called the lovesong of the Upland Plover.

(262) **BUFF-BREASTED SANDPIPER**—*Tryngites subruficollis*—This bird is rather uncommon on our Atlantic coast; it inhabits the dry prairies and sandy fields during migration, and is rarely taken along the beach.

265—(270) **BLACK-BELLIED PLOVER**—*Squatarola squatarola*. See 65, 66, 395.

(272) **AMERICAN GOLDEN PLOVER**—*Charadrius dominicus*—Range—Whole of North America, breeding in the Arctic regions and wintering south of Patagonia. During the fall it was, until recently, common along the shore of Lakes Ontario and Erie, especially near the mouth of the Niagara River, on the plains some distance back from the lake. It is one of the most highly prized game birds.

(273) **KILLDEER PLOVER**—*Oxyechus vociferus*. See 67, 387.

(274) **SEMI-PALMATED PLOVER**—*Ægialitis semipalmata*. See 68.

266—(289) **BOB WHITE**—*Colinus virginianus*—The depredations of cats and other animals, and the persecution of gunners and pot hunters combine to keep these birds continually in check. Its whistle is familiar, "Bob-white," or "Buckwheat." See 70, 403.

267—(298c) **CANADA SPRUCE GROUSE, OR SPRUCE PARTRIDGE**—*Canachites canadensis canace*. It is common throughout the tamarac and spruce swamps of the north woods, and is becoming scarcer each year. It is an unsuspicious bird and will not fly unless actually obliged to. The nest is placed on a slight elevation beside a stump or beneath the branches of a spruce tree. Eggs are 8 to 14 in number, rather pointed, speckled with rich chestnut. Size 1.72 x 1.25.

(300a) **CANADA RUFFED GROUSE**—*Benass umbellus togata*. See 71.

268—(315) **PASSENGER PIGEON**—*Ectopistes migratorius*—In 1864 millions of these birds occupied the timber in Ontario. A large hemlock would frequently contain 30 or 40 nests with eggs or young. Both male and female take part in incubation and in feeding the squabs. See 72, 73, 396.

(316)—**MOURNING DOVE**—*Zenaidura macroura carolinensis*. See 74, 75, 409.

269—(325) **TURKEY VULTURE**—*Cathartes aura septentrionalis*—The Turkey Vulture, or Turkey Buzzard, as it is called, inhabits tropical and temperate America from Patagonia to Saskatchewan and British Columbia. This bird is the most accomplished aeronaut among our birds of prey. It nests upon the ground in a secluded spot. It is very valuable as a scavenger, its food consisting entirely of carrion. Eggs number 1 to 2, plain, or spotted with chocolate. Size 2.8 x 2 inches. See 399.

(331) **MARSH HAWK**—*Circus hudsonius*. See 76, 410.

(333) **COOPER'S HAWK**—*Accipiter cooperi*. See 78, 270.

(337) **RED-TAILED HAWK**—*Buteo borealis borealis*. Our typical and commonest Buzzard Hawk. It inhabits eastern North America from the Gulf States to northern Canada. Nests in the tallest trees in large patches of woods; this species, though called Hen Hawk, rarely visits the poultry yard. The greater part of its food consists of small mammals. The call of the Red-tail is a long-drawn squealing whistle. From 2 to 4 eggs, white, blotched and spotted with various shades of brown. Size 2.35 x 1.80. See 406.

(347a) **ROUGH-LEGGED HAWK**—*Archibuteo lagopus sanctijohannis*—This bird inhabits the boreal zone from Newfoundland and central British Columbia to the limit of trees, and wanders southward in winter to the Lake Ontario lowlands. Three eggs of a bluish white color, splashed with dark brown. Size 2.25 x 1.75.

(352) **BALD EAGLE**—*Haliaeetus leucocephalus leucocephalus*. See 83.

(356a) **DUCK HAWK**—*Falco peregrinus anatum*. See 84.

(364) **OSPREY—FISH HAWK**—*Pandion haliaetus carolinensis*. See 87.

270—(332) **SHARP-SHINNED HAWK**—*Accipiter velox*. See 77, 408.

(333) **COOPER'S HAWK**—*Accipiter cooperi*. See 78, 269, 272.

271—(334) **GOSHAWK**—*Astur atricapillus atricapillus*. See 79, 80, 407.

272—(333) **COOPER'S HAWK**—*Accipiter cooperi*. See 78, 269, 270.

(337) **RED-TAILED HAWK**—*Buteo borealis borealis*. See 269, 273.

273—(337) **RED-TAILED HAWK**—*Buteo borealis borealis*. See 269, 272.

(339) **RED-SHOULDERED HAWK**—*Buteo lineatus lineatus*. See 81, 411.

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274—(347a) **ROUGH-LEGGED HAWK**—*Archibuteo lagopus sancti-Johannis*. See 269.

(331) **MARSH HAWK**—*Circus hudsonius*. See 76, 270.

(343) **BROAD-WINGED HAWK**—*Buteo platypterus*. See 82, 412.

275 (349) **GOLDEN EAGLE**—*Aquila chrysaetos*—This eagle inhabits the entire Holarctic realm, but is mostly confined to mountainous districts. It is a little larger than the Bald Eagle. The eggs are the most handsome of the Raptores, being white in color and blotched, splashed, spotted and speckled with light brown, and clouded with grey and lilac, varying in pattern and intensity. Size 2.90 x 2.50. See 418.

(352) **BALD EAGLE**—*Haliaeetus leucocephalus leucocephalus*. See 83, 421.

276 (353) **WHITE GYRFALCON**—*Falco islandus*—It is an Arctic species, but has been taken in Ontario. This family choose prey which is sometimes larger and heavier than themselves. They nest on ledges of high cliffs, laying 3 to 4 eggs, of a buffy color, blotched with reddish brown. Size 2.30 x 1.80.

(354a) **GYRFALCON**—*Falco rusticolus gyrfalco*—The Gyrfalcon is the largest, swiftest and most powerful of our Falcons. It differs from the White Gyrfalcon only in coloring; breeding, also, in the Arctic regions.

(354b) **BLACK GYRFALCON**—*Falco rusticolus obsolatus*—This Gyrfalcon breeds in northern Ungava and Labrador, and comes southward in winter as far as Ontario, New York and Rhode Island.

277 (356a) **DUCK HAWK**—*Falco peregrinus anatum*—A beautiful bird, characterized by its black moustache. A regular, but not common, autumn visitor to southern Ontario; rarely seen in spring. Has been found nesting in eastern Ontario, and also in Muskoka. The eggs are the most brightly marked and most beautiful of Falcon eggs.

278—(357) **Pigeon HAWK**—*Falco columbarius columbarius*—The Pigeon Hawk, Bullet Hawk, or Little Blue Corporal, is a fairly common bird in Ontario. Its flight is swift and powerful. Preys entirely upon birds, breeding chiefly north as far as Alaska and Ungava. Its 4 or 5 eggs are of a brownish buff color, heavily blotched with brown and chestnut. Size 1.50 x 1.22.

(360) **SPARROW HAWK**—*Falco sparverius sparverius*. See 86, 408.

279—(365) **BARN OWL**—*Aluco pratincola*—The Barn Owl has a long, peculiarly hooded face, from which it gets the name of "Monkey-faced Owl." It inhabits the warmer portions of North America, and is a rare bird in Ontario. Four to six pure white eggs. Size 1.70 x 1.30. See 419.

(366) **LONG-EARED OWL**—*Asio wilsonianus*—Inhabits the temperate portion of North America from Nova Scotia and Saskatchewan to the tablelands of Mexico. Cedar and hemlock swamps, pinewoods and alder thickets are its favorite retreats. It ranks close to the Barn Owl and the Saw-whet in its services to agriculture, as its food consists mostly of mice. Seven white eggs. Size 1.62 x 1.28.

280—(368) **BARRED OWL**—*Strix varia varia*. See 90.

(370) **GREAT GREY OWL**—*Scotiaptex nebulosa*—The Great Grey Owl inhabits the Boreal forests of North America from central Alberta northward to the limit of trees. In winter it wanders southward as far as California. Two to four white eggs. Size 2.15 x 1.70 inches.

(376) SNOWY OWL—*Nyctea nyctea*. See 94, 95, 422.

281 (371) RICHARDSON'S OWL—*Cryptoglaux funerea richardsoni*.—This species breeds from northern British Columbia and Alberta, and winters south to Ontario. Makes its home in the cavity at the bottom of a tree. Size of eggs 1.25 x 1.95.

(372) SAW-WHET OWL—*Cryptoglaux acadia acadia*. See 91.

(377a) HAWK OWL—*Surnia ulula caparoch*. This bird, the Nearctic sub-species of *S. ulula*, breeds from British Columbia, Montana and Ungava, northward to the limit of trees. It is not rare as a winter visitant to Ontario. A very active bird, especially in the day time, for it is more diurnal than nocturnal. Three to eight white eggs. Size 1.50 x 1.20. See 415.

282 - (367) SHORT-EARED OWL—*Asio flammeus*. See 88, 89, 423.

(373) SCREECH OWL—*Otus asio asio*. It inhabits eastern North America from Ontario and New Brunswick to Texas and Georgia. Our commonest owl. Remains concealed during the day in a hollow tree, and at dusk issues forth and utters his mournful whistle. The Screech Owl assumes a curious appearance to escape observation. The upper figure in this plate is by no means an extreme illustration of this attitude. See 417.

283 (375) GREAT HORNED OWL—*Bubo virginianus virginianus*.—This species and its varieties are the only large Owls having conspicuous tufts. See 93, 416.

284 (387) YELLOW-BILLED CUCKOO—*Coccyzus americanus americanus*.—Range—United States, east of the plains, and from southern Canada southward. The economic value of the Cuckoo cannot be questioned. This and the next species are our only birds that are fond of hairy caterpillars, and they may be often found seated beside their tents. From three to four dozen caterpillars seem to be a meal. The eggs are deposited at intervals, so that young birds and fresh eggs may be found in the nest at the same time. It is unfortunate that these birds are not more abundant. Their numbers might be increased by offering them suitable thickets in which to nest. They are of great value to the farmer. Nest and eggs similar to the Black-billed Cuckoo. See 441.

(385) BLACK-BILLED CUCKOO—*Coccyzus erythrophthalmus*.—Commoner in Ontario than the Yellow-billed Cuckoo. See 96, 434.

(390) BELTED KINGFISHER—*Ceryle alcyon*. See 97, 437.

285—(393) HAIRY WOODPECKER—*Dryobates villosus villosus*.—The Hairy Woodpecker is a resident and is common in the wooded districts. In the fall, winter and early spring it appears in orchards, doing efficient service against borers, cocoons and other enemies of the trees. Early in the season the Hairy Woodpecker begins to excavate its nesting hole, which is found at a height of from 30 to 60 feet. The hole is excavated in living trees, the opening being circular, two inches in diameter, leading backward two or three inches in the solid wood, then downward for eight to sixteen inches. Chips are left at the bottom of the cavity as a bed for the eggs, which are 3 to 5 in number, pure white; size .95 x .73.

(394c) DOWNY WOODPECKER—*Dryobates pubescens medianus*. See 98, 427.

286—(400) ARCTIC THREE-TOED WOODPECKER—*Picoides arcticus*.—This species is confined to the spruce and balsam belt of the Canadian zone. Its food consists of the larvae of the boring beetles, which are found

just beneath the dead bark. The nesting hole is excavated in tamarack, balsam or spruce, twenty to forty feet from the ground. Eggs are white; size .96 x .73. A yellow crown patch distinguishes the male.

287 (401) **AMERICAN THREE-TOED WOODPECKER**—*Picoides americanus americanus*—Range: Northern parts of the United States, north to the Arctic regions. This bird shares with the Canada Jay the distinction of being one of our perfectly non-migratory species. Inhabits the spruce swamps and mountain sides. Its nesting habits are the same as those of the Arctic Three-toed Woodpecker. See 431.

288 (402) **YELLOW-BELLIED SAPSUCKER**—*Sphyrapicus varius varius*. See 99, 429.

(406) **RED-HEADED WOODPECKER**—*Melanerpes erythrocephalus*—Very fond of fruit, but in spite of this small thieving and occasional attacks upon the young of other birds, the Red-headed Woodpecker must be regarded as a beneficial species. It destroys immense numbers of grasshoppers, ants and boring beetles. See 101, 102, 425.

289 (405a) **NORTHERN PILEATED WOODPECKER**—*Phloeotomus pileatus abieticola*—Beneficial to our farmers, as it does away with immense quantities of ants and grubs, which destroy the standing timber. See 100, 432.

290 (409) **RED-BELLIED WOODPECKER**—*Centurus carolinus* The food of this species is much like that of the Red-head, but it does not seem to be so fond of garden fruits. See 103, 424.

(412a) **NORTHERN FLICKER**—*Colaptes auratus luteus* The economic value of the Flicker cannot be disputed for an instant. It is one of the best birds which the horticulturist can encourage. See 104, 428.

291 (417) **WHIP-POOR-WILL**—*Antrostomus vociferus vociferus*. See 105.

(420) **NIGHTHAWK**—*Chordeiles virginianus virginianus* The Night-hawk, or some of its sub-species, is found in nearly all parts of North America, its habits being the same in all localities. Frequently seen flying about in the bright daylight, high in the air, though he prefers to hunt in the evening and early morning, and his notes are heard late at night as he hawks about for insects high in the air. They lay their eggs on a bare rock or waste field, or on gravel-covered roofs of city buildings. The young are covered with a greyish down, invisible among the gravel. Eggs, two in number, greyish white; size 1.20 x .85. See 439.

292 (428) **RUBY-THROATED HUMMINGBIRD**—*Archilochus colubris*. See 106, 438.

293 (444) **KINGBIRD**—*Tyrannus tyrannus*. See 108, 447.

(452) **CRESTED FLYCATCHER**—*Myiarchus crinitus*. See 107.

(456) **PHOEBE**—*Sayornis phoebe*. See 109, 448.

(459) **OLIVE-SIDED FLYCATCHER**—*Nuttallornis borealis*—Inhabits eastern North America, breeding from Massachusetts to Minnesota, and in the Alleghenies from North Carolina, northward to the Hudsonian zone; winters in tropical America. Its nest is placed at a height of 25 to 40 feet, usually on the limb of a spruce tree, and is composed of roots, grasses and mosses. Eggs, two to four in number; creamy white, spotted, especially about the larger end, with reddish brown and lilac. See 451.

294 (461) **WOOD PEWEE**—*Myiobanes virens*. See 110, 445.

(463) **YELLOW-BELLIED FLYCATCHER**—*Empidonax flaviventris*. In Ontario it is a fairly common summer resident, inhabiting mostly the shady slopes and mountains, where the rocks and soil are covered with a dense mat of green moss. Here it may be found from early in June to the first of August. It constructs its nest in the moss on some fallen log or rock. Eggs 3 to 5 in number; milky white, spotted with cinnamon brown. Size of eggs .67 x .51 inches. See 450.

(465) **ACADIAN FLYCATCHER**—*Empidonax virescens*.—This species inhabits eastern North America from southern Ontario to Texas, and winters in northwestern South America. It prefers dry situations to swampy localities. The eggs are from 2 to 4 in number, cream ground, spotted with dark reddish brown; size .74 x .53 inches.

(466a) **ALDER FLYCATCHER**—*Empidonax traillii aliorum*. The Alder Flycatcher inhabits eastern North America from central Alaska, Quebec and Newfoundland and southern Ontario. It prefers swamps more or less thickly covered with alders. The nest is from one and a half to four feet from the ground. Eggs 3 to 4; creamy white, sprinkled with brown. Size .73 x .53.

(467) **LEAST FLYCATCHER**—*Empidonax minimus*. See 111.

295 (473) **SKYLARK**—*Alauda arvensis*. This European species has been introduced in New York State. Well established in 1887, but they are not increasing in numbers and barely hold their own. See 188, 569.

(474) **HORNED LARK**—*Otocoris alpestris alpestris*. The Horned Lark inhabits the boreal region from Boothia Peninsula to James Bay, Labrador and Newfoundland, and winters south in the United States. Confined principally to the coastal districts. It arrives from the north about October 20th to November 15th. See 456.

(474b) **PRAIRIE HORNED LARK**—*Otocoris alpestris praticola*. See 112.

(497) **PIPIT**—*Anthus rubescens*. The Wagtail family is more developed in the Old World than in America. This species is Arctic, and only of passage occur in Ontario, frequenting the shores, mud flats and plough fields.

296—(477) **BLUE JAY**—*Cyanocitta cristata cristata*. The Blue Jay carries acorns and chestnuts and buries them in the ground for future use. In this way he plants many forest trees. He also does good by destroying many injurious insects, but his mischief is never ending, as he is one of the worst nest robbers we have. See 113, 454.

297—(484) **CANADA JAY**—*Perisoreus canadensis canadensis*.—The Canada Jay, known to the northern hunters as "Whiskey Jack," "Moose Bird," and "Camp Robber," inhabits the boreal region of eastern America from Mackenzie, Keewatin and northern Quebec to Alberta. It rarely straggles southward in the winter. In the winter season it is impossible to drive these birds away from the carcasses of deer or other animals which have been killed. They will enter the camp, hop about the table and devour anything within reach, paying no attention to the human occupants. The nest is placed in a small conifer. Eggs, 3 to 5; a dull grey speckled with purple brown; size 1.15 x .82. See 459.

(486a) **NORTHERN RAVEN**—*Corvus corax principalis*. See 114.

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298 (488) **AMERICAN CROW**—*Cervus brachyrhynchus brachyrhynchus*. See 115, 458.

(490) **FISH CROW**—*Cervus ossifragus*. This crow inhabits the coastal districts of the eastern United States. It is confined to the lower Hudson valley and is distinguished from the common crow by its smaller size and being less suspicious is more easily approached.

299 (494) **BOBOLINK**—*Dolichonyx oryzivorus*. See 116, 466

(498) **RED-WINGED BLACKBIRD**—*Agelaius phoeniceus phoeniceus*. See 119, 462.

(500) **RUSTY BLACKBIRD**—*Euphagus carolinus*. This species inhabits eastern North America breeding from Alaska to central Ontario. Winters from the Ohio River to Gulf of Mexico. Has been called the Thrush blackbird on account of its song. Its notes are more liquid than the Crow Blackbird. The nest is walled in with mud or rotten wood, after the manner of that of the thrush. Four to five eggs; bluish green, spotted with chocolate brown; size 1.73 x 1 inch. See 467

300—(493) **STARLING**—*Sturnus vulgaris*. See 190, 455

(495) **COWBIRD**—*Molothrus ater ater*. See 117, 469.

(511) **PURPLE GRACKLE**—*Quiscalus quiscula quiscula*. Range—Eastern United States from the gulf of Massachusetts, winters along the gulf. In habits and economic importance this species does not differ from the Bronze Grackle, which is more abundant. The nest and eggs are indistinguishable from those of the Bronzed Grackle.

(511a) **BRONZED GRACKLE**—*Quiscalus quiscula aeneus*. See 122, 465,

301 (501) **MEADOW LARK**—*Sturnella magna magna*. See 120

(506) **ORCHARD ORIOLE**—*Icterus spurius*. The Orchard Oriole inhabits western North America from southern Ontario to Texas and the gulf coast, and winters from southern Mexico to South America. Its song is different from that of our commoner Baltimore Oriole; it is richer and more flexible. The bird is even more beneficial than that of the Baltimore Oriole, as it rarely feeds on small fruits, but subsists on caterpillars, beetles and plant lice. See 451.

(507) **BALTIMORE ORIOLE**—*Icterus galbula*. See 121, 468

302—(515) **PINE GROSBEEK**—*Pinicola enucleator leucura*—In Toronto it is slightly irregular, but has been often seen feeding on the mountain ash berries in our streets in winter. See 124, 125, 126, 496.

(517) **PURPLE FINCH**—*Carpodacus purpureus purpureus*. See 127, 494.

303 (521) **CROSSBILL**—*Loxia curvirostra minor*. The Crossbill breeds in the boreal zone of America occasionally as far south as southern New York. It is more erratic than the Pine Grosbeak and more of a wanderer, following the best crop of pine, spruce and hemlock cones. They are very dextrous in their work of extracting seeds from the cones, hanging by their feet and bills as expertly as parrots and exhibiting very little fear of mankind. See 481.

(522) **WHITE-WINGED CROSSBILL**—*Loxia leucoptera*. See 128.

304—(528) **REDPOLL**—*Acanthis linaria linaria*. See 129, 495

(528b) **GREATER REDPOLL**—*Acanthis linaria rostrata*—Next to the Lesser Redpoll, this is our commonest species. It is much larger than the Lesser. Nesting habits similar to those of the Lesser Redpoll. Eggs slightly larger.

(529) **AMERICAN GOLDFINCH**—*Astragalinus tristis tristis*. See 132, 305, 488, 561.

(533) **PINE SISKIN**—*Spinus pinus*—The Siskin, or Pine Finch, inhabits North America from central Alaska to the mountains of Lower California and to Nova Scotia and the lower Hudson Valley. In winter it wanders over the whole of United States. It resembles the Goldfinch in habits; feeds on the seeds of conifers and various weeds. Its song suggests the Goldfinch, but is less melodious. See 490.

305—(514) **EVENING GROSBEAK**—*Hesperiphona vespertina vespertina*. See 123, 484.

(529) **AMERICAN GOLDFINCH**—*Astragalinus tristis tristis*. See 131, 132, 304, 408, 561.

EUROPEAN GOLDFINCH—*Acanthis carduelis*—This Old World species was introduced at Hoboken, N.J., in 1878, but from all reports it seems it is not likely to become established in this country. See 199.

306—(534) **SNOW BUNTING**—**SNOWFLAKE**—*Plectrophenax nivalis nivalis*. See 133, 493.

(559) **TREE SPARROW**—*Spizella monticola monticola*—While feeding among the weeds the Tree Sparrow keeps up a continual tinkling of notes compared to the syllables, "teel-wit," and in the spring it has a beautiful strain of long-drawn notes like a canary. See 137.

307—(541) **IPSWICH SPARROW**—*Passerculus princeps*—This bird is confined to the North Atlantic coast; breeds on Sable Island, Nova Scotia, and winters as far south as Georgia.

(542a) **SAVANNAH SPARROW**—*Passerculus sandwichensis savanna*—This sparrow is confined to eastern North America and northern Ungava. It winters from New Jersey and northeastern Mexico, and is a common transient visitant in Ontario. Its haunts are open, grassy fields; nests in meadows in the long grass. The 3 to 5 eggs, of greyish white, vary in markings; size .75 x .55. See 473.

(546) **GRASSHOPPER SPARROW**—*Ammodramus savannarum australis*—Inhabits eastern North America from southern Wisconsin, Ontario and New Hampshire. It is rarely found in localities of greater elevation than 1,000 feet, preferring sandy upland meadows. Its note resembles a meadow grasshopper. Nests in dense meadows. Eggs, 4 to 5, white, spotted with brown; size .73 x .54.

(547) **HENSLOW'S SPARROW**—*Passerherbulus henslowi henslowi*—This sparrow breeds in eastern United States and Ontario, and winters in southern States. Few are able to distinguish Henslow's Sparrow. This is a southern species. Eggs, greenish white, spotted with reddish brown; size .75 x .55.

(548) **LECONTE'S SPARROW**—*Passerherbulus lecontei*—Inhabits central North America from Great Slave Lake, southern Saskatchewan and Manitoba; winters from Kansas to Texas, Florida and the coast of South Carolina. It is purely an accidental visitant to southern Ontario.

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(549) **SHARP-TAILED SPARROW**—*Passerherbulus caudatus*—This sub-species inhabits the salt marshes of the Atlantic coast from Massachusetts to Virginia. It is not an Ontario bird.

(549.1) **NELSON'S SPARROW**—*Passerherbulus nelsoni nelsoni*—Breeds from Great Slave Lake and central Alberta southward to Manitoba. Winters on the Atlantic and Gulf coast. It occurs every autumn from September 22nd to October 27th, along the shore of Lake Ontario. There is also one spring date, June 10th, 1895, from Toronto. It is found in the reedy margin of lake or river.

(549.1a) **ACADIAN SHARP-TAILED SPARROW**—*Passerherbulus nelsoni subvirgatus*—This sub-species of the Nelson Sparrow inhabits the salt marshes of the Atlantic coast, from southeastern Quebec, Prince Edward Island, and Cape Breton to Maine. Winters as far south as the coast of Florida. Its habits are the same as the Nelson Sparrow.

(550) **SEASIDE SPARROW**—*Passerherbulus maritimus maritimus*—This species inhabits the Atlantic sea coast from southern Massachusetts to Virginia, and winters south of Georgia. Not an Ontario bird.

308—(540) **VESPER SPARROW, BAY-WINGED BUNTING**—*Pooecetes gramineus*—The song is loud, clear and ringing, sweeter and more plaintive than that of the song sparrow. See 134.

(554) **WHITE-CROWNED SPARROW**—*Zonotrichia leucophrys leucophrys*—The song of the White-crown is one of the finest of our sparrow melodies, resembling somewhat the latter portion of the White-throat performance (a peculiar, sad cadence). See 135, 477.

(558) **WHITE-THROATED SPARROW**—*Zonotrichia albicollis*—This bird is supposed to say, in a plaintive minor key, "O sweet, Canada, Canada, Canada." See 131.

(567) **SLATE-COLORED JUNCO**—*Junco hyemalis hyemalis*—This little bird is very gentle, coming into the garden or dooryard to feed on waste crumbs. It does an immense amount of good by destroying countless weed seeds and man dormant insects. Has two distinct songs—one, a simple trill, like the Chipping Sparrow, but more melodious, and another, a whispering warble, sweet and low. See 139, 489.

309—(560) **CHIPPING SPARROW**—*Spizella passerina passerina*—The Chipping Sparrow is a common summer resident of Ontario, excepting in the densely forested regions. It is found particularly near the habitations of men. Green caterpillars and beetles are the favorite food of its young. Two broods are usually hatched in a season. The song of the Chipping Sparrow is a thin, monotonous trill—Chip, chip, chip, chip. Three to five eggs, greenish blue, speckled about the larger end with dark brown and purplish; size .70 x .52. See 471.

(563) **FIELD SPARROW**—*Spizella pusilla pusilla*. See 138, 475.

(585) **FOX SPARROW**—*Passerella iliaca iliaca*—Range—From the Gulf of St. Lawrence and Labrador to Alaska. It is a fairly common transient visitor with us. As early as the third week in March his cheery song may be heard—a clear, loud, melodious whistle. This sparrow is 6.75 x 7.5 inches in length and quite bright in color. See 478.

310—(581) **SONG SPARROW**—*Melospiza melodia melodia*. See 140, 474.

(583) **LINCOLN'S SPARROW**—*Melospiza lincolni lincolni*—Range—North America from the Yukon valley, central Ontario, Nova Scotia, as well as in the Rocky and Sierra Nevada mountains. Present in the spruce and tamarack swamps. Its song suggests the bubbling, guttural notes of the House-wren and the rippling music of the Purple Finch. Its nest resembles that of the Song Sparrow.

(584) **SWAMP SPARROW**—*Melospiza georgiana*—An abundant summer resident in marshes; breeds throughout its range in Ontario. Dark in color, and owing to its shy habits, not commonly seen during the breeding season. Its nest, which is of grasses, is placed on the ground in spots where walking is extremely treacherous. The eggs are greenish white, clouded with brown spots; size .75 x .55. See 141, 476.

(587) **TOWHEE**—*Pipilo erythrophthalmus erythrophthalmus*. See 142, 487.

311—(593) **CARDINAL**—*Cardinalis cardinalis cardinalis*—Range—Eastern United States from Iowa and southern New York to the Gulf coast; it is non-migratory. A resident of dense swamps and thickets. The song of the Cardinal is a loud, clear whistle. Its nest is composed of twigs, rootlets and weed stalks and strips of bark, placed in thick bushes. Eggs 3 to 4, pale bluish white, speckled with brown and greyish; size 1.00 x .65 inches. If the residents of localities where this bird is found could protect it, there is no doubt that it would remain throughout the winter. See 487.

(595) **ROSE-BREASTED GROSBEAK**—*Zamelodia ludoviciana*. See 143, 485.

312—(597) **BLUE GROSBEAK**—*Guiraca caerulea*—Range—Southeastern United States, northward as far as southern Pennsylvania, Kentucky and Kansas. No specimens found in Ontario. See 487.

(598) **INDIGO BUNTING**—*Passerina cyanea*—The song of this bird has a pleasant, chirping warble. A wholly beneficial species. See 144, 487.

313—(608) **SCARLET TANAGER**—*Piranga erythromelas*. See 145, 503.

(610) **SUMMER TANAGER**—*Piranga rubra rubra*—Range—Eastern United States from Florida to southern New Jersey, wandering as far north as New England and Nova Scotia. It winters in Central and South America. Inhabits woodlands, as does our Scarlet Tanager, which it resembles in breeding habits.

314—(611) **PURPLE MARTIN**—*Progne subis subis*—Range—North America from Nova Scotia, Saskatchewan and Idaho, south to Florida. Winters in South America. It is a summer resident, but not as common in our cities and villages as it was fifty years ago. This bird must be protected as it is very beneficial. Aside from unfavorable weather conditions its principal enemy is the English Sparrow. Eggs, 4 to 6, white; size .95 x .65. See 502.

(612) **CLIFF SWALLOW**—*Petrochelidon lunifrons lunifrons*. See 146, 503.

(613) **BARN SWALLOW**—*Hirundo erythrogastra*. See 146, 503.

(614) **TREE SWALLOW**—**WHITE-BREASTED SWALLOW**—*Iridoprocne bicolor*. See 147, 506.

(616) **BANK SWALLOW**—*Riparia riparia*—Our smallest swallow. Range—from the edge of the tropics to Labrador and Alaska. It is a summer resident in Ontario, abundant where sand banks are plentiful.

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Like the White-breasted Swallow, it hunts its prey over the surface of the water. Its excavations are from 18 inches to 3 feet in depth, the nest, composed of straw, grass, etc., being at the end of the tunnel. Four to six eggs, white; size .68 x .48.

(617) **ROUGH-WINGED SWALLOW**—*Steigodopteryx serripennis*—This bird resembles the Bank Swallow, but is larger. Range—British Columbia, Minnesota and Massachusetts, southward to the Gulf coast. Winters in the tropics. It inhabits our river valleys and lake shores. The nest is in fissures of shale, rock, or around the stonework of bridges. Eggs, 5 to 8 in number, white; size .72 x .52.

315—(618) **BOHEMIAN WAXWING**—*Bombycilla garrula*—Range—Northern Hemisphere, breeding far north in the high mountains of the west, straggling southward in winter as far as Ontario and northern United States. They resemble the Cedar Waxwing, but are larger. See 505.

(619) **CEDAR WAXWING—CHERRY BIRD**—*Bombycilla cedrorum*. See 149, 500, 554.

316—(621) **NORTHERN SHRIKE**—*Lanius borealis*. See 150.

(622e) **MIGRANT SHRIKE**—*Lanius ludovicianus migrans*—Range—Eastern America, from northern Minnesota, Michigan, southern Quebec, Maine and New Brunswick; winters from the Middle States to Texas. It has been confused with the Northern Shrike. This species has become more numerous since 1869. It is a regular breeder in southern Ontario. Being smaller than the Northern Shrike, it rarely destroys our song birds, but impales meadow mice, large beetles and grasshoppers, which seem to be its favorite food.

317—(624) **RED-EYED VIREO**—*Vireosylva olivacea*. See 151, 152, 498.

(626) **PHILADELPHIA VIREO**—*Vireosylva philadelphica*—Range—Eastern North America from Labrador, northern Manitoba, northern Ontario, New Brunswick and Maine, to northern Michigan. Winters in Central America.

(627) **WARBLING VIREO**—*Vireosylva gilva gilva*—Range—Eastern North America from southeastern Alberta, northern Manitoba, Ontario and Nova Scotia. Winters south of United States. The song of this species is a rolling warble, longer than the Red-eyed Vireo, and not so frequently repeated. It reminds one of the song of the Purple Finch, but is not so full of variety. The nest is suspended from fork of a shade tree. Eggs are 4 in number, white, spotted with umber and reddish brown; size .76 x .55 inches.

(628) **YELLOW-THROATED VIREO**—*Lanivireo flavifrons*. See 153.

(629) **BLUE-HEADED VIREO**—*Lanivireo solitarius solitarius*—Range—North America, southern Alberta, southern Mackenzie, southern Quebec and Cape Breton Island, southward to North Dakota; winters south to Texas; summer resident in the Canadian zone. The song of the Solitary Vireo is more melodious than that of the "Red-eyed and Yellow-throat. See 507.

(631) **WHITE-EYED VIREO**—*Vireo griseus griseus*—Range—Eastern United States, from eastern Nebraska, southern New York to Texas and Florida. Winters in Guatemala. Its song is unlike those of the other Vireos. The nest is composed of bits of rotten wood, spider's nests and newspaper, and down from weeds, woven by bits of grass and bark. Three or four eggs, white, spotted with black and red-brown; size .75 x .55. See 499.

318—(636) **BLACK AND WHITE WARBLER**—*Mniotilta varia*. See 155, 183, 518.

(637) **PROTHONOTARY WARBLER**—*Prothonotaria citrea*—This species is confined to the warmer portions of the eastern United States. It wanders northward during the spring migration, as far as Ontario, New England and New Brunswick. Its haunts are in the swampy forests. Build in hollow trees and in deserted Woodpecker and Chickadee holes. Its note resembles the call of the Solitary Sandpiper. See 525.

(639) **WORM-EATING WARBLER**—*Helmitheros vermivorus*—Range—North America, from northern Illinois, western Pennsylvania, lower Hudson, and the mountains of South Carolina, wintering to Panama and Florida. It is not an Ontario bird. The song is very like that of the Chipping Sparrow.

(674) **OVEN-BIRD**—*Seiurus aurocapillus*. See 166, 522.

(675) **WATER-THRUSH**—*Seiurus noveboracensis noveboracensis*—Range—Northern Ontario, Newfoundland to central Ontario, New York. Winters from Mexico, West Indies and British Guiana. It is a common summer resident about the edges of ponds and swamps, and even about the edges of our lawns. A most jubilant singer. Nests are hidden in thick beds of moss. Eggs, 4 to 5; size .80 x .60.

(676) **LOUISIANA WATER-THRUSH**—*Seiurus motacilla*—Breeds in southern Minnesota, Michigan, Ontario, New York and southern New England to South Carolina; winters from Mexico and the West Indies to Colombia. The Louisiana, or Large-billed Water-thrush, prefers rugged streams. It has a habit of starting as many as three nests and then abandoning them for other sites. A characteristic feature of this bird's nest is a door mat, or patch of leaves, from 6 to 12 inches long, leading from the nest, which is cunningly concealed behind drooping ferns. Eggs are white, blotched with chestnut and neutral tints; sizes .76 x .62. See 521.

319—(641) **BLUE-WINGED WARBLER**—*Vermivora pinus*—Range—Eastern North America from southeastern Minnesota, southern Michigan, Connecticut and Massachusetts, southward to Missouri. A summer resident in the coastal district, Long Island and the Hudson valley. It is rare in Ontario.

(642) **GOLDEN-WINGED WARBLER**—*Vermivora chrysoptera*—Breeds in eastern North America, including southern Ontario; winters south. Inhabits swampy thickets. Its song sounds like the syllables, zee-uee, zee-uee, zee-uee. The nest measures close to 3½ inches high. White eggs, speckled with cinnamon, are 3 to 5 in number; size .62 x .50. See 514.

LAWRENCE WARBLER—*Vermivora lawrenci*—At one time this was held as a distinct species, but the opinion now obtains that it is a hybrid.

BREWSTER WARBLER—*Vermivora leucobronchialis*—This Warbler is now regarded, like the Lawrence, as a hybrid between the Blue-winged and Golden-winged Warblers.

(645) **NASHVILLE WARBLER**—*Vermivora rubricapilla rubricapilla*. See 154.

(646) **ORANGE-CROWNED WARBLER**—*Vermivora celata celata*. See 157.

(647) **TENNESSEE WARBLER**—*Vermivora peregrina*—Range—From southern Mackenzie, southern Ungava and Anticosti, Manitoba, Ontario. Like the Nashville, it nests upon the ground. Its song is a two-noted trill, very staccato, like a Chipping Sparrow.

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320—(648) **PARULA WARBLER**—*Compsothlypis americana americana*
—This sub-species ranges from District of Columbia south to Alabama and
Florida, wintering probably in Florida and in the West Indies. It may be
considered an inhabitant of New York State coastal district. Eggs, 4 to
6, white or creamy white, wreathed with specks of reddish brown and
chestnut. See 509.

(654) **BLACK-THROATED BLUE WARBLER**—*Dendroica caerulescens caerulescens*. See 160, 512.

(655) **MYRTLE WARBLER**—*Dendroica coronata*—Range—From the
limit of trees in Alaska and Labrador to Maine. In the summer it fre-
quents coniferous forests of the Canadian zone. Its song is a loud silvery
sleigh-bell trill. Nest loose and bulky. White eggs, spotted with reddish
brown or purplish, 3 to 5 in number; size .70 x .53. See 516.

(656) **CERULEAN WARBLER**—*Dendroica caerulescens*—Range—South-
eastern Minnesota, southern Michigan and southern Ontario, western New
York, western Pennsylvania, to eastern Texas. They are numerous in
maple woods, and are not shy birds; one can approach to within a few feet
of them. The nests are works of art, made of strands of weeds and wild
grapevine bark, and grasses, lined with reddish rootlets and tendrils, and
decorated on the outside with whitish lichen. Eggs, 4 in number, greenish
blue, spotted with reddish brown; size .69 x .52. See 520.

(656) **CANADA WARBLER**—*Wilsonia canadensis*—Breeds in central
Alberta, northern Ontario, Quebec and Newfoundland, south to United
States. Its song is very brisk and clear. Eggs, 3 to 5 in number; size
.68 x .52.

321 (650) **CAPE MAY WARBLER**—*Dendroica tigrina*—Range—In sum-
mer, Nova Scotia, New Brunswick, Hudson's Bay, southward into Maine,
westward to Manitoba and Alberta. The eggs are marked with shades
of lilac and reddish brown; size .67 x .49.

(652) **YELLOW WARBLER**—*Dendroica aestiva aestiva*—Range—
Greater portion of United States and British America with the exception of
the southwestern States and Florida. It is a common resident with us and
is the most familiar member of the family, known in all our gardens and
parks, even in trees of the city streets. Its cheery song, wee-chee, wee-chee,
wee-chee, is well known. Nests in a shrub. This species is one of those
selected by the Cowbird as a foster mother for its offspring. Four or five
eggs, white or pale greenish, speckled with spots of umber, black and lilac;
size .69 x .50. See 524.

(671) **PINE WARBLER**—*Dendroica virens*. See 165.

(672) **PALM WARBLER**—*Dendroica palmarum palmarum*—Breeds from
southern Mackenzie, central Keewatin, southward to northern Minnesota.
It is a low feeding species, flying about near the ground; has a peculiar
habit of "teetering" its tail.

(672a) **YELLOW PALM WARBLER**—*Dendroica palmarum hypochrysea*
—Breeds from Ontario, northern Quebec and Newfoundland to southern
Nova Scotia. Winters south.

(673) **PRAIRIE WARBLER**—*Dendroica discolor*—A southern Ontario
bird; nests in barberries or hickories. Eggs are white or greenish, spotted
with dark red brown, purple and umber, and are 3 to 5 in number; size
.64 x .48. The Prairie Warbler is not a bird of the grassland, as might
be inferred from its name, but prefers dry hillsides, partially covered with
bushes. See 519.

322—(659) **CHESTNUT-SIDED WARBLER**—*Dendroica pensylvanica*. See 161, 162, 523.

(660) **BAY-BREASTED WARBLER**—*Dendroica castanea*. See 163.

(661) **BLACK-POLL WARBLER**—*Dendroica striata*—Breeds in the boreal zone to limit of trees, Alaska and Labrador, southward to northern Maine. It is not so easily observed as other migrating Warblers, as it arrives when the leaves have partially completed their growth. Nests are placed in low spruces. Eggs are 4 to 5 in number, creamy white, spotted with brown; size .72 x .50.

323—(667) **MAGNOLIA WARBLER**—*Dendroica magnolia*. See 158, 515.

(662) **BLACKBURNIAN WARBLER**—*Dendroica fusca*. See 164.

(667) **BLACK-THROATED GREEN WARBLER**—*Dendroica virens*. See 159.

(687) **AMERICAN REDSTART**—*Setophaga ruticilla*. See 169, 511.

324—(677) **KENTUCKY WARBLER**—*Oporornis formosus*—Range—Eastern United States, breeding from New York to the Gulf and Michigan; winters in South America. Inhabits densely grown, well-watered forest. Its song is repeated five to ten times, loud and clear, "tee-wee-o, tee-wee-o." Nest on the ground in a dense tangle. Eggs are 4 to 5 in number, white, blotched with umber and reddish brown and lilac; size .74 x .58.

(681) **MARYLAND YELLOWTHROAT**—*Geothlypis trichas trichas*. See 167.

(683) **YELLOW-BREASTED CHAT**—*Icteria virens virens*—Range—Southern Minnesota, Wisconsin, Michigan, Ontario, central New York to Gulf coast; winters south. The Chat is not a bird of the dense woodland, but is confined to thick coverts of shrubs or tangles of vines. He is sometimes found in the limits of our villages and cities. Its song is impossible to describe. It is a great singer and pours forth a flood of musical gurgles and whistles. Eggs, 3 to 5, pure white, tinged with pink and greenish, evenly spotted with reddish brown and lavender. Size .92 x .72. See 513.

(684) **HOODED WARBLER**—*Wilsonia citrina*—Breeds from southeastern Nebraska, southwestern Michigan, central New York, lower Connecticut valley, and winters south. Prefers the mature forest. Its nest is one of the easiest to find, being from one to three feet from the ground and constructed of dry leaves, strips of bark, rootlets and fine grasses. Eggs, 3 to 5, white ground color, spotted or wreathed with reddish purplish and lavender; size .74 x .54. See 510.

(685) **WILSON'S WARBLER**—*Wilsonia pusilla pusilla*. See 168.

325—(678) **CONNECTICUT WARBLER**—*Oporornis agilis*—Breeds in Manitoba and Ontario. Inhabits the tamarack swamps of Manitoba. Its song resembles the syllables "beecher, beecher, beecher." Nests are made of leaves, bark fibres, grass, rootlets and hair, and are made on the ground in the woods or among raspberry vines. Eggs are white, speckled with brown and neutral tints; size .75 x .55.

326—(679) **MOURNING WARBLER**—*Oporornis philadelphia*—Breeds in Alberta, Saskatchewan, central Ontario, and mountains of West Virginia. The song resembles that of the Maryland Yellowthroat, though softer. Nest is of dead weeds and grass, lined with fine strips of black inner bark.

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327—(703) **MOCKINGBIRD**—*Mimus polyglottos polyglottos*—Inhabits southern United States, Ontario and Massachusetts. A wonderful songster. It is closely related to the Brown Thrasher. Eggs, bluish green, speckled with brown; size 1.00 x .75. See 534.

(704) **CATBIRD**—*Dumetella carolinensis*. See 172, 528.

(705) **BROWN THRASHER**—*Toxostoma rufum*. See 173, 531.

328—(718) **CAROLINA WREN**—*Thryothorus ludovicianus ludovicianus*—The largest of our Wrens; inhabits eastern United States, breeding from southern Iowa, southern Pennsylvania and the lower Hudson to the Gulf States. In recent years it has enlarged its territory northward. Prefers rocky glens and borders of streams. Its call notes are varied, composed of metallic rattles and musical trills. Its nest is concealed in old stumps, hollows in trees and crevices in rocks and buildings. Eggs, 4 to 6, white, spotted with brown and lavender; size .74 x .60. See 527.

(721) **HOUSE WREN**—*Troglodytes aedon aedon*. See 175, 532.

(722) **WINTER WREN**—*Nannus hiemalis hiemalis*. See 174, 533.

(724) **SHORT-BILLED MARSH WREN**—*Cistothorus stellaris*—Inhabits the austral zone of eastern North America from southern Saskatchewan, southern Ontario and southern Maine, to eastern Kansas, Missouri, Indiana and northern Delaware. It winters to the Gulf States. Prefers wet meadows and borders of marshes. Its nest is placed close to the ground, in a dense bunch of grass. Eggs, 6 to 8, pure white; size .62 x .45. See 529.

(725) **LONG-BILLED MARSH WREN**—*Telmatodytes palustris palustris*—Range—Eastern United States, southern Ontario, southern Quebec, south to coast of Virginia. A common species in Lakes Ontario and Erie and Niagara River, confined to the flooded marshes. Their jingling melody is a most cheering sound. Five to eight eggs, of a pale chocolate color; size .64 x .45. See 526.

(726) **BROWN CREEPER**—*Certhia familiaris americana*—This subspecies inhabits eastern North America, breeding from southern Manitoba, central Ontario, southern Quebec and Newfoundland, southward. Winters from New York to Gulf coast. It is an abundant summer resident and quite tame. The nest is composed of fine twigs, mosses and bark. Eggs, 5 to 8, white ground, speckled with cinnamon or reddish brown; size .62 x .48. The Brown Creeper is one of the most valuable assistants of the horticulturist and forester. Its food is entirely of insects taken from the bark of trees. See 180, 537.

329—(727) **WHITE-BREASTED NUTHATCH**—*Sitta carolinensis carolinensis*. See 179, 182, 536.

(728) **RED-BREASTED NUTHATCH, OR RED-BELLIED NUTHATCH**—*Sitta canadensis*. See 181, 543.

(731) **TUFTED TITMOUSE**—*Basolophus bicolor*—Inhabits the warmer portions of the eastern United States, from Nebraska, Illinois, Pennsylvania and New Jersey, to Texas and the Gulf coast. Prefers groves and woodlands. Its song is somewhat like the Chickadee's, but louder. Makes its nest in the deserted hole of a Woodpecker or in a hollow stump. Eggs, 5 to 8, cream white, spotted with reddish brown; size .74 x .56. See 538.

(735) **CHICKADEE**—*Penthestes atricapillus atricapillus*. See 184, 140.

(740a) **ACADIAN CHICKADEE**—*Penthestes hudsonicus littoralis*. Range—Northeastern America, from Quebec and Newfoundland, northern Vermont and central New Hampshire, occasionally straggling southward. Its habits are similar to those of the common Chickadee, but its notes are different.

330- (748) **GOLDEN-CROWNED KINGLET**—*Regulus satrapa satrapa*. See 176, 539.

(749) **RUBY-CROWNED KINGLET**—*Regulus calendula calendula*. See 177, 178, 541.

(751) **BLUE-GREY GNATCATCHER**—*Polioptila caerulea caerulea*. Range—Eastern Nebraska, southern Wisconsin, Michigan, Ontario, southwestern Pennsylvania and southern New Jersey to Florida. It is a bird of the forest. Has been compared in appearance and song to the famous Nightingale. The nest of the bird is a beautiful structure, covered with lichens, and resembling that of the Ruby-throated Humming-bird. It is placed on a horizontal crotch of a limb. The eggs, 4 or 5 in number, are white, thickly speckled with reddish brown and amber; size .57 x .46. See 542.

331 - (755) **WOOD THRUSH**—*Hylocichla mustelina*. Range—South Dakota, Minnesota, Wisconsin, southern Ontario to Texas and northern Florida. Winters in Central America. Found singing at the very top of the tall forest trees, but, like all Thrushes, its food is gleaned from the ground. It seeks beetles, bugs, snails, wild cherries, etc. Eggs, 3 to 5 in number, greenish blue; average size 1.08 x .71. See 548.

(756) **VEERY-WILSON'S THRUSH**—*Hylocichla fuscescens fuscescens*. See 130, 545.

(757) **GREY-CHEEKED THRUSH**—*Hylocichla aliciae aliciae*. Range—Hudsonian zone from northwest Alaska, northwestern Mackenzie to central Ungava and Newfoundland. Winters in South America. It is found about our lawns and shrubbery as well as forests during migration time.

(758a) **OLIVE-BACKED THRUSH**—*Hylocichla ustulata swainsoni*. This bird breeds in Canadian and lower Hudsonian zone, from northwestern Alaska, Newfoundland, and southward to eastern Oregon and mountains of United States. It is a common summer resident of the Canadian zone. This species is not so shy as the Grey-cheeked Thrush. Its song reminds one of the Veery's, intensified, going up instead of down the scale. The nest is placed in low balsams, spruces or bushes, and is composed mostly of mosses. Eggs, greenish blue, spotted with reddish brown; size .90 x .64. See 546.

(759b) **HERMIT THRUSH**—*Hylocichla guttata pallasi*. The Hermit Thrush breeds in the Canadian and Transition zones of eastern North America from southern Yukon, central Alberta to Ontario, and south to Pennsylvania. This bird is very like the Robin, feeding about the lawns. It is often called the Swamp Robin, on account of its beautiful song. Its sweetness of tone and exquisite modulation are unequalled. In the winter it prefers cedar groves and evergreen swamps near the coast. Nest is composed of coarse grasses, leaves and moss lined with pine needles. Beneath the lining is usually a cup of mud or damp rotten wood, as is customary with the other Thrushes. Eggs, 4 to 6 in number, greenish blue in color; size .88 x .69. See 553.

332—(761) **ROBIN**—*Planesticus migratorius migratorius*. See 186, 549.

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(766) **BLUEBIRD**—*Sialia sialis sialis*—Of all our native birds the Bluebird is regarded as the favorite. Its beautiful colors and lovable disposition, mellow voice and beneficial habits have endeared it to all. We can only regret that it has not the vitality of the Robin. See 147, 544.

333—(31) **BRUNNICH MURRE**—*Uria lomvia*. See 229.

334—(3) **HORNED GREBE**—*Colymbus auritus*. See 23, 227.

335—(23) **MARbled MURRELET**—*Brachyramphus marmoratus*—Range North Pacific coast, breeding from Vancouver Island; south in winter to southern California. Places a single egg in a hole in the ground, or in a crevice among the cliffs. In breeding plumage the Marbled Murrelet is brownish black above, barred with rusty; underparts marbled with brownish grey and white.

336—(34) **DOVEKIE**—*Alle alle*. See 229.

337—(7) **LOON**—*Gavia immer*. See 228.

338—(12) **TUFTED PUFFIN**—*Lunda cirrhata*—The largest of the Puffins. Range—Pacific coast from Alaska southward to southern California, breeding locally throughout its range. Places a single egg in burrows in the ground, or in natural crevices formed by the rocks. Eggs are pure white, or pale buff, without gloss; they very often have barely perceptible shell markings of a dull purplish color.

339—(6) **PIED-BILLED GREBE**—*Podilymbus podiceps*. See 4, 227.

340—(40) **KITTIWAKE**—*Rissa tridactyla*. See 232.

341—(64) **CASPIAN TERN**—*Sterna caspia*. See 234.

342—(77) **BLACK TERN**—*Hydrochelidon nigra surinamensis*. See 9, 234.

343—(125) **WHITE PELICAN**—*Pelecanus erythrorhynchos*—Range—Temperate North America. Many thousands breed on Great Salt Lake, Utah, and Shoal Lake, Manitoba. Nest in large communities on islands in some of the inland lakes; the nest is a simple structure of sticks and weeds, placed on the ground. The bird gets its food by approaching a school of small fish, suddenly dipping its head beneath the surface and scooping up a number of the fish at a time. After allowing the water to run out of the sides of the mouth, it proceeds to swallow its catch.

344—(120) **DOUBLE-CRESTED CORMORANT**—*Phalacrocorax auritus*. See 10, 235.

345—(109) **WILSON'S PETREL**—*Oceanites oceanicus*—Breeds in the southern hemisphere in February and March; spends the summer off the Atlantic coast as far north as Newfoundland. The greatest wanderer of the genus, being found at different seasons in nearly all quarters of the globe. Lays a single egg.

346—(60) **BONAPARTE'S GULL**—*Larus philadelphia*. See 7, 8, 232.

347—(54) **RING-BILLED GULL**—*Larus delawarensis*. See 231.

348—(70) **COMMON TERN**—*Sterna hirundo*. See 233.

349—(132) **MALLARD DUCK**—*Anas platyrhynchos*. See 12, 13, 238.

350—(139) **GREEN-WINGED TEAL**—*Nettion carolinense*. See 20, 239.

- 351—(130) **RED-BREASTED MERGANSER**—*Mergus serrator*. See 236.
- 352—(144) **WOOD DUCK**—*Aix sponsa*. See 25, 240.
- 353—(131) **HOODED MERGANSER**—*Lophodytes cucullatus*. See 237.
- 354—(142) **SHOVELLER**—*Spatula clypeata*. See 22, 240.
- 355—(141) **CINNAMON TEAL**—*Querquedula cyanoptera*—A small duck marked by the uniform rich chestnut plumage and light blue wing coverts. Its nest, closely woven of grass and weeds, and lined with down and feathers from the breast of the bird, is built on the ground, in marshes or fields, near water. Eggs, from 6 to 14; pale buff. Range—Western United States, chiefly west of the Rocky Mountains. Casually east to Texas and Illinois, and to British Columbia.
- 356—(133) **BLACK DUCK**—*Anas rubripes*. See 14, 15, 238.
- 357—(143) **PINTAIL**—*Dafila acuta*. See 23, 24, 241.
- 358—(146) **REDHEAD**—*Marila americana*. See 26, 242, 557.
- 359—(147) **CANVAS-BACK**—*Marila valisneria*. See 27, 28, 242.
- 360—(153) **BUFFLE-HEAD**—*Charitonetta albeola*. See 35, 36, 236.
- 361—(149) **LESSER SCAUP DUCK**—*Marila affinis*. See 243.
- 362—(167) **RUDDY DUCK**—*Eriamatura jamaicensis*. See 42, 43, 236.
- 363—(137) **BALD-PATE DUCK**—**AMERICAN WIDGEON**—*Mareca americana*. See 19, 239.
- 364—(165) **WHITE-WINGED SCOTER**—*Oidemia deglandi*. See 246.
- 365—(151) **GOLDEN-EYE**—*Clangula clangula americana*. See 33, 34, 244.
- 366—(172) **CANADA GOOSE**—*Branta canadensis*. See 44, 248.
- 367—(183) **ROSEATE SPOONBILL**—*Ajaia ajaja*. Breeds in small colonies in marshy places, often in company with Herons and Ibises. Its nest is a rather frail platform of sticks, placed in bushes or trees, from four to fifteen feet from the ground. Eggs have a ground color of dull white, or pale greenish blue, and are heavily blotched with several shades of brown; three or four in number.
- 368—(201) **GREEN HERON**—*Butorides virescens*. See 249.
- 369—(190) **AMERICAN BITTERN**—*Buteo lentiginosus*. See 249.
- 370—(197) **SNOWY EGRET**—*Egretta candidissima*—Owing to the merciless slaughter to which it has been subjected, its ranks have been sadly decimated. Common now only in restricted localities, in the Gulf States and Mexico.
- 371—(202) **BLACK-CROWNED NIGHT HERON**—*Nycticorax nycticorax naevius*. See 250.
- 372—(182) **FLAMINGO**—*Phoenicopterus ruber*—It requires several years for this bird to attain adult plumage, which varies from white to a deep rosy red. Unlike most birds, the Flamingo is in the best of plumage during the winter. The feet are webbed, but more for the purpose of affording support upon the mud flats than for use in swimming. The nest, which is usually built on a sandy point of an island, is a mound of earth,

grass and rubbish, from one to two feet in height, the top being hollowed to receive the eggs, which are two in number, and of a pale blue, covered with a heavy chalky white deposit.

373—(191) **LEAST BITTERN**—*Ixobrychus exilis*. See 46, 249, 556.

374—(184) **WHITE IBIS**—*Quara alba*—A tropical and sub-tropical species; very abundant in most marshy localities along the Gulf Coast, and north to South Carolina, west to Lower California. Having no plumes, they have not been persecuted as have the White Herons. They build their nests of sticks and grasses, in the mangroves a few feet above water. In other localities the nests are entirely of dead rushes, attached to standing ones a foot or more above the water. They are quite substantially made and deeply cupped.

375—(194) **GREAT BLUE HERON**—*Ardea herodias*. See 47, 250.

376—(200) **LITTLE BLUE HERON**—*Florida caerulea*—Range—South Atlantic and Gulf coasts, north casually to New England, Manitoba, Nova Scotia, and occasionally even to Labrador; west to Kansas and Nebraska. Breeds in immense rookeries during April and May. The plumage of the young birds is always white, the longer quills tipped with bluish slate.

377—(215) **YELLOW RAIL**—*Coturnicops noveboracensis*. See 252.

378—(206) **SAND-HILL CRANE**—*Grus mexicana*. See 250.

379—(219) **FLORIDA GALLINULE**—*Gallinula galeata*. See 50, 253, 562.

380—(214) **SORA**—*Porzana carolina*. See 49, 252.

381—(221) **COOT**—*Fulica americana*. See 51, 253.

382—(224) **WILSON PHALAROPE**—*Steganopus tricolor*. See 256, 563.

383—(208) **KING RAIL**—*Rallus elegans*. See 251, 555.

384—(225) **AVOCET**—*Recurvirostra americana*—Known also as the Bluestocking. Inhabits interior and western America, from Texas to Saskatchewan, wintering from the Gulf coast southward. Its nest, found on the borders of marshy places, is simply a lining of grass in a hollow in the ground. Eggs, three or four in number, of a dark greenish or brownish buff color, boldly marked with brown and black.

385—(218) **PURPLE GALLINULE**—*Ionornis martinica*. See 253.

386—(263) **SPOTTED SANDPIPER**—*Actitis macularia*. See 64, 262.

387—(279) **KILLDEER**—*Oxyechus vociferus*. See 67, 265.

388—(228) **WOODCOCK**—*Philohela minor*. See 53, 257.

389—(230) **WILSON SNIPE**—*Gallinago delicata*. See 54, 258.

390—(261) **BARTRAMIAN SANDPIPER, OR UPLAND PLOVER**—*Bartramia longicauda*. See 264.

391—(255) **LESSER YELLOW LEGS**—*Totanus flavipes*. See 262.

392—(258a) **WESTERN WILLET**—*Catoptrophorus semipalmatus inornatus*—Range—Western North America, breeding north to Manitoba and British Columbia. Casually found on South Atlantic coast during migrations. Similar in nesting habits to the common Willet; eggs can not be distinguished from those of the latter bird.

- 393 (277) **PIPING PLOVER**—*Aegialitis modesta*. See 69.
- 394 (264) **LONG-BILLED CURLEW**—*Numenius americanus*. See 263.
- 395—(270) **BLACK-BELLIED PLOVER**—*Squatarola squatarola*. See 65, 66, 265.
- 396—(315) **PASSENGER PIGEON**—*Ectopistes migratorius*. See 72, 268.
- 397 (300) **RUFFED GROUSE**—*Bonasa umbellus umbellus*. It has been hunted so freely that it has become very wary. Makes its home preferably in heavily timbered woods. Eggs number eight to fifteen, and are brownish buff in color, sometimes sparsely speckled with brown.
- 398 (304) **WHITE-TAILED PTARMIGAN**—*Lagopus leucurus*.—The bird is here shown in winter plumage. Ptarmigan, which form the staple article of diet for northern foxes, are remarkable in that they are in an almost continual state of moulting, nearly every month in the year showing them in different stages of plumage. They are feathered to the toes, and in winter the toe-feathers grow so dense and hair-like that they not only protect the toes from the cold, but make excellent snowshoes, enabling the birds to walk easily over the lightest snow. The White-Tailed Ptarmigan is to be found in the highest ranges of the Rockies, from New Mexico north to Alaska.
- 399—(325) **TURKEY VULTURE**—*Cathartes aura septentrionalis*. See 269.
- 400—(316) **MOURNING DOVE**—*Zenaidura macroura carolinensis*. See 74, 75, 268.
- 401—(308b) **PRAIRIE SHARP-TAILED GROUSE**—*Pedioecetes phasianellus campestris*. Very similar to the Sharp-tailed Grouse and the Columbian Sharp-tailed Grouse. The nesting habits and eggs of all three are not to be distinguished. Eggs are of a drab color, very minutely speckled with brown.
- 402 (306) **PRAIRIE HEN**—*Tympanuchus cupido*.—The Prairie Hen, or Pinnated Grouse, of which the Heath Hen is the Atlantic coast representative, is found on the Western Prairies. It is slightly larger than the Heath Hen.
- 403—(289) **BOB-WHITE**—*Colinus virginianus*. See 70, 266.
- 404 (310) **WILD TURKEY**—*Meleagris gallopavo silvestris*.—Resembles the "Bronzed Turkey" of the domestic race, but the erectile process on the forehead is less developed. Yearly being confined to a smaller range, chiefly because of the destruction of their natural covers, and because of the proclivities of hunters. They are usually very wary birds, and either escape by running through the underbrush, or by flying when a human being appears. Nests are found under tangled growths of underbrush or briars.
- 405—(296) **MEARNS QUAIL**—*Cyrtonyx montezumae mearnsi*.—Often called the "Fool Quail," because of its eccentric and clownish markings, streaks and spots of black, white, buff, grey and chestnut; also because of its apparent stupidity. It frequents scrubby wooded places rather than open hill-sides, and is very easy to approach and kill. Its nest is a hollow in the ground, lined with grasses and concealed by overhanging tufts of grass. The eggs, which are pure white, are hardly distinguishable from those of the Bob-white, but the average is longer.
- 406—(337) **RED-TAILED HAWK**—*Buteo borealis borealis*. See 269.

- 407- (334) **GOSHAWK**—*Astur atricapillus atricapillus*. See 79, 80, 271
- 408- (332) **SHARP-SHINNED HAWK**—*Accipiter velox*. See 77
- 409- (360) **SPARROW HAWK**—*Falco sparverius sparverius*. See 86, 278
- 410- (331) **MARSH HAWK**—*Circus hudsonius*. See 76, 269.
- 411 (364) **OSPREY**—*Pandion haliaetus carolinensis*. See 47, 269
- 412- (343) **BROAD-WINGED HAWK**—*Buteo platypterus*. See 82, 274
- 413 (327) **SWALLOW-TAILED KITE**—*Elanoides forficatus* Bangs - Southern United States; casually north to New York and Manitoba. As a rule places its nest, which is made of sticks, weeds and moss, high up in the tallest trees. Eggs are two in number, or, rarely, three; white or bluish white, spotted with brown. This beautiful Kite is also known as the Snake Hawk
- 414 (339) **RED-SHOULDERED HAWK**—*Buteo lineatus lineatus*. See 81, 273
- 415- (377a) **HAWK OWL**—*Burnia viola caparoch*. See 281.
- 416 (375) **GREAT HORNED OWL**—*Bubo virginianus virginianus*. See 93, 283.
- 417 (373) **SCREECH OWL**—*Otus asio asio*. See 282
- 418 (349) **GOLDEN EAGLE**—*Aquila chrysaetos* - Most abundant in the Rockies and along the Pacific coast ranges. Builds its nest, which is of large sticks, lined with smaller ones, and with leaves and moss, in the tops of trees, and, more rarely, upon the ledges of cliffs. The eggs, the handsomest of the Raptors, are white in color, blotched, splashed, spotted and speckled with light brown, and clouded with grey or lilac. See 275
- 419- (366) **BARN OWL**—*Aluco pratincola*. See 279, 365.
- 420- (378) **BURROWING OWL**—*Speotyto cunicularia hypogaea*—Range: Western North America from the Mississippi Valley west to California; north to the southern parts of British America, and south to Central America. Wholly different in plumage, form and habits from any other American Owls. Can be readily recognized by its long, slender and scantily feathered legs. Lives mostly in the burrows of Prairie Dogs and other rodents.
- 421 (352) **BALD EAGLE**—*Haliaeetus leucocephalus leucocephalus*. See 83, 276.
- 422- (376) **SNOWY OWL**—*Nyctea nyctea*. See 94, 95, 280.
- 423- (367) **SHORT-EARED OWL**—*Asio flammeus*. See 88, 89, 282.
- 424- (409) **RED-BELLIED WOODPECKER**—*Centurus carolinus*. See 103, 290.
- 425- (406) **RED-HEADED WOODPECKER**—*Melanerpes erythrocephalus*. See 101, 102, 288.
- 426- (407a) **CALIFORNIA WOODPECKER**—*Melanerpes formicivorus bairdi*—In suitable localities this is the most abundant of Woodpeckers on the Pacific coast. Has none of the bad habits of the Red-head. Nests indifferently in all kinds of trees, at any height from the ground. The Cali-

ifornia Woodpecker has the habit of storing food for future use developed to a greater extent than any other of the family. Sometimes completely honeycombs the exterior surface of decayed trees with holes designed to hold acorns.

427—(394c) **DOWNY WOODPECKER**—*Dryobates pubescens medianus*. See 98, 285.

428—(412a) **FLICKER**—*Colaptes auratus luteus*. See 104, 290.

429—(402) **YELLOW-BELLIED SAPSUCKER**—*Sphyrapicus varius varius*. See 99, 288.

430—(397) **NUTTALL'S WOODPECKER**—*Dryobates nuttalli*—Range—Pacific coast, from Oregon, south to Lower California. Nests in holes in trees, either in dead stumps or in growing trees, and at any height above the ground. Deposits its white, glossy eggs upon the bottom of the cavity during April and May.

431—(401) **THREE-TOED WOODPECKER**—*Picoides americanus americanus*. See 287.

432—(405a) **NORTHERN PILEATED WOODPECKER**—*Phloeotomus pileatus abieticola*. See 100, 289.

433—(417) **WHIP-POOR-WILL**—*Antrostomus vociferus vociferus*. See 105, 291.

434—(388) **BLACK-BILLED CUCKOO**—*Coccyzus erythrophthalmus*. See 96, 284.

435—(385) **ROAD-RUNNER**—*Geococcyx californianus*—Known also as the "Chaparral Cock," "Ground Cuckoo," "Snake-killer," etc. Most abundant on the Mexican border. Noted for its swiftness on foot, paddling over the ground at an astonishing rate, aided by its outstretched wings and spread tail, which act as aeroplanes. Feeds on lizards and small snakes, being particularly savage in its attacks upon the latter.

436—(423) **CHIMNEY SWIFT**—*Chaetura pelagica*—The Chimney Swift, or Swallow, as it is commonly called, is never seen perching on trees or telegraph wires, but may be espied on the wing at all hours of the day; especially abundant in the early morning and towards dusk. May be recognized by its general sooty coloration and the rapid wheeling or flickering flight alternating with occasional soaring. Range—North America east of the Plains, breeding from central Canada south to the Gulf coast, and wintering south of our borders. Very abundant in all portions of its range.

437—(390) **BELTED KINGFISHER**—*Ceryle alcyon*. See 97, 284.

438—(428) **RUBY-THROATED HUMMINGBIRD**—*Archilochus colubris*. See 106, 292.

439—(420) **NIGHTHAWK**—*Chordeiles virginianus virginianus*. See 290.

440—(382) **CAROLINA PAROQUET**—*Conuropsis carolinensis*—Owing to its wanton slaughter by plumage hunters, bird catchers, fruit growers and sportsmen, the Carolina Paroquet has been exterminated in the greater portion of its range; now restricted to a few localities in Florida, where it is found in almost uninhabitable swamps and thickets.

441—(387) **YELLOW-BILLED CUCKOO**—*Coccyzus americanus americanus*. See 284.

442—(465) **ACADIAN, OR GREEN-CRESTED FLYCATCHER**—*Empidonax virescens*. See 294.

443—(466) **TRAILL'S FLYCATCHER**—*Empidonax traillii traillii*—Range—Western North America, from the Mississippi to the Pacific; winters south of the United States. Nests abundantly in thickets and low scrubby woods, usually placing its nest at a low elevation, preferably in a clump of willows. The structure consists of fine strips of bark, plant fibres and very fine rootlets, woven and firmly fastened in upright crotches.

444—(447) **ARKANSAS KINGBIRD**—*Tyrannus verticalis*—Range—Western United States and southern British provinces, from Kansas and Minnesota west to the Pacific. Very abundant in the west. Builds its nest of plant fibres, weeds, string, paper, or any available trash.

445—(461) **WOOD PEWEE**—*Myiochanes virens*. See 110, 294.

446—(443) **SCISSOR-TAILED FLYCATCHER**—*Muscivora forficata*—Known also as the "Texan Bird of Paradise." Range—Mexico, north through Texas to southern Kansas; accidental in other parts of the country. Its large, roughly constructed nest, made of rootlets, grasses, weeds, paper, rags, string, etc., and lined with plant fibres, hair or wool, is found in all kinds of trees and at any elevation, but averaging between ten and fifteen feet above the ground. Eggs have a creamy white ground color, more or less spotted and blotched with reddish brown, lilac and grey, the markings generally being most numerous about the larger end.

447—(444) **KINGBIRD**—*Tyrannus tyrannus*. See 108, 293.

448—(456) **PHOEBE**—*Sayornis phoebe*. See 109, 293.

449—(454) **ASH-THROATED FLYCATCHER**—*Myiarchus cinerascens*—Range—North America, west of the Plains and south of Canada. Nests in cavities in trees, either natural or made by Woodpeckers. The eggs, four or five in number, cannot be distinguished from those of the Mexican Crested Flycatcher.

450—(463) **YELLOW-BELLIED FLYCATCHER**—*Empidonax flaviventris*. See 294.

451—(459) **OLIVE-SIDED FLYCATCHER**—*Nuttallornis borealis*. See 293.

452—(486) **RAVEN**—*Corvus corax sinuatus*—Similar in habits and appearance to the Crow, but is more dignified, and remains mated for life. Subsists largely on animal matter, such as lizards, shell fish, frogs, eggs and young of birds, and carrion, as well as grasshoppers and worms. Nests on ledges of high, inaccessible cliffs, or in the tops of tall trees, the structure being of large sticks, lined with smaller ones and hair or wool. Eggs, light greenish in color, blotched with umber and drab. Range—North America, west of the Rockies, and from British Columbia southward.

453—(475) **MAGPIE**—*Pica pica hudsonia*. See 189.

454—(477) **BLUE JAY**—*Cyanocitta cristata cristata*. See 113, 296.

455—(493) **STARLING**—*Sturnus vulgaris*. See 190, 300.

456—(474) **HORNED LARK**—*Otocoris alpestris alpestris*. See 295.

457 - (478b) **LONG-CRESTED JAY**—*Cyanocitta stelleri diademata*—Range—Southern Rocky Mountains from Arizona to Wyoming. There is no general difference between the eggs of the Long-crested Jay and those of the Steller Jay. The nests of each are also constructed similarly and in like situations.

458—(488) **C ROW**—*Corvus brachyrhynchos brachyrhynchos*. See 115, 298.

459 - (484) **CANADA JAY**—*Perisoreus canadensis canadensis*. See 297.

460—(491) **CLARKE'S NUTCRACKER**—*Nucifraga columbiana*—Often called the Clarke Crow. Range—Mountains of western North America from Mexico to Alaska. A common resident in most of its range. Its food consists of anything edible, from seeds and larvae in winter, to insects, berries, eggs and young birds at other seasons. In the spring it retires to the tops of ranges, nearly to the limit of trees, where it builds its large nest of sticks, twigs, weeds, strips of bark and fibres matted together, so as to form a soft, round ball, with deeply cupped interior.

461—(506) **ORCHARD ORIOLE**—*Icterus spurius*. See 301.

462—(498) **RED-WINGED BLACKBIRD**—*Agelaius phoeniceus phoeniceus*. See 118, 119, 299.

463—(503) **AUDUBON'S ORIOLE**—*Icterus melanocephalus auduboni*—Range—Mexico and the Lower Rio Grande Valley in Texas. Builds at a low elevation in trees, preferably mesquites, making its nest of woven grasses and hanging it from small twigs of the trees. The nest is somewhat like that of the Orchard Oriole; not long and pensile like that of the Baltimore Oriole. Eggs, greyish white, blotched, clouded, spotted or streaked with brownish and purple.

464—(501) **MEADOWLARK**—*Sturnella magna magna*. See 120, 301.

465—(511b) **BRONZED GRACKLE**—*Quiscalus quiscula aeneus*. See 122, 300.

466—(494) **BOBOLINK**—*Dolichonyx oryzivorus*. See 116, 299.

467—(509) **RUSTY BLACKBIRD, OR GRACKLE**—*Euphagus carolinus*. See 299.

468—(507) **BALTIMORE ORIOLE**—*Icterus galbula*. See 121, 301.

469—(495) **COWBIRD**—*Molothrus ater ater*. See 117, 300.

470—(497) **YELLOW-HEADED BLACKBIRD**—*Xanthocephalus xanthocephalus*—Inhabits western North America, breeding from the southern parts of the United States, north to British Columbia and Hudson's Bay, and wintering from the southern United States downward. Very abundant in some parts of the west, where it nests in large colonies in sloughs and marshes; especially abundant in the Dakotas and Manitoba. Accidental in Ontario and Quebec. Makes its nest of strips of rushes, skilfully woven together and attached to upright cane near the surface of the water. Eggs, greyish white ground color, finely speckled and spotted with shades of brown and grey.

471—(560) **CHIPPING SPARROW**—*Spizella passerina passerina*. See 309.

472—(540) **VESPER SPARROW**—Bay Wing—*Poocetes gramineus gramineus*. See 134.

- 473—(542a) SAVANNAH SPARROW—*Passerculus sandwichensis* savanna. See 307.
- 474—(581) SONG SPARROW—*Melospiza melodia melodia*. See 140, 310.
- 475—(583) FIELD SPARROW—*Spizella pusilla pusilla*. See 138, 309.
- 476—(584) SWAMP SPARROW—*Melospiza georgiana*. See 141, 310.
- 477—(584) WHITE-CROWNED SPARROW—*Zonotrichia leucophrys*. See 135, 308.
- 478—(585) FOX SPARROW—*Passerella iliaca iliaca*. See 309.
- 479—(552) LARK SPARROW—*Chondestes grammacus grammacus*—Range—Mississippi Valley from the Plains to Illinois, and casually farther east, and from Manitoba to Texas; winters in Mexico. A sweet singer and very welcome in its range, where it is quite abundant. The nest is generally placed on the ground in the midst of or under a clump of weeds or tuft of grass; sometimes in bushes, or even trees. Eggs, white marked chiefly about the large end with blackish zig-zag lines and spots.
- 480—(601) PAINTED BUNTING—*Passerina ciris*—Breeds from the Gulf of Mexico, north to Kansas, southern Illinois and North Carolina; winters in tropical America. Without exception, the most gaudy of North American birds. Makes its home, as a rule, in bushes or hedges at low elevations, but occasionally in branches of tall trees. The nest is of weeds, shreds of bark, grasses, etc., lined with fine grass. Eggs, white or pale bluish white, speckled with reddish brown. Frequently two broods are raised in a season. The Painted Bunting, or Nonpareil, is frequently kept as a cage bird, but more for its bright coloring than for its musical ability.
- 481—(598) INDIGO BUNTING—*Passerina cyanea*. See 144, 312.
- 482—(587) TOWHEE—*Pipilo erythrophthalmus erythrophthalmus*. See 142, 310.
- 483—(524) GREY-CROWNED ROBY FINCH—*Leucosticte tephrocotis tephrocotis*—Range—Rocky Mountain region from Saskatchewan, south to northern United States, and also breeding in the Sierra Nevadas; winters on the lowlands of the northwestern United States and east to Manitoba. Nests on the ground, in June, laying four or five white eggs.
- 484—(514)—EVENING GROSBEAK—*Hesperiphona vespertina vespertina*. See 123, 304.
- 485—(595) ROSE-BREASTED GROSBEAK—*Zamelodia ludoviciana*. See 143, 311.
- 486—(593) CARDINAL—*Cardinalis cardinalis cardinalis*. See 311.
- 487—(597) BLUE GROSBEAK—*Guiraca caerulea*. See 312.
- 488—(529) AMERICAN GOLDFINCH—*Astragalinus tristis tristis*. See 131, 132, 304, 305, 561.
- 489—(567) SLATE-COLORED JUNCO—*Junco hyemalis hyemalis*. See 139, 308.
- 490—(533) PINE SISKIN—*Spinus pinus*. See 304.
- 491—(521) CROSSBILL—*Loxia curvirostra minor*. See 303.

492—(537) **SMITH'S LONGSPUR**—*Calcarius pictus*—Range—Breeds in Hudson's Bay and Mackenzie River districts, wintering south to Texas, chiefly on the Plains. Very common on the prairies in the central United States in winter. Builds its nest, a scantily made structure of grasses, on the ground.

493—(534) **SNOWFLAKE—SNOW BUNTING**—*Plectrophenax nivalis nivalis*—A wholly beneficial species because of its destruction of weed seeds. Feeds entirely on the ground; hardly ever observed to alight on trees. See 133, 306.

494—(517) **PURPLE FINCH**—*Carpodacus purpureus purpureus*. See 127, 302.

495—(528) **REDPOLL**—*Acanthis linaria linaria*. See 129, 304.

496—(515) **PINE GROSBEEK**—*Pinicola enucleator leucura*. See 124, 125, 126, 302.

497—(604) **DICKCISSEL**—*Spiza americana*—Breeds in the Mississippi Valley from Minnesota and Wisconsin south to Texas. Winters in Central and South America. The Dickcissel, or Black-throated Bunting, is very common in dry, bush-grown pastures and on the prairies. A persistent singer, and its song, though simple, is very welcome on hot days when other birds are quiet. Eggs, pale blue, without spots.

498—(624) **RED-EYED VIREO**—*Vireosylva olivacea*. See 151, 152, 317.

499—(631) **WHITE-EYED VIREO**—*Vireo griseus griseus*. See 317.

500—(619) **CEDAR WAXWING—CHERRY BIRD**—*Bombycilla cedrorum*. See 149, 315, 554.

501—(608) **SCARLET TANAGER**—*Piranga erythromelas*. See 145, 313.

502—(611) **PURPLE MARTIN**—*Progne subis subis*. See 314.

503—(613) **BARN SWALLOW**—*Hirundo erythrogastra*. See 146, 314.

504—(622) **LOGGERHEAD SHRIKE**—*Lanius ludovicianus ludovicianus*—Range—United States, east of the Plains, breeding north to New England and Illinois; winters in southern States. Makes its home in hedges or thickly tangled brush, showing a predilection for dense thorn bushes. Nest, a pile of weeds, grasses, feathers and rubbish.

505—(618) **BOHEMIAN WAXWING**—*Bombycilla garrula*. See 315.

506—(614) **TREE SWALLOW—WHITE-BREASTED SWALLOW**—*Iridoprocne bicolor*. See 147, 314.

507—(629) **BLUE-HEADED VIREO**—*Lanivireo solitarius solitarius*. See 317.

508—(679) **MOURNING WARBLER**—*Oporornis philadelphia*. See 326.

509—(648) **PARULA WARBLER**—*Compothylpis americana americana*. See 320.

510—(694) **HOODED WARBLER**—*Wilsonia citrina*. See 324.

511—(687) **AMERICAN REDSTART**—*Setophaga ruticilla*. See 189, 323.

512—(654) **BLACK-THROATED BLUE WARBLER**—*Dendroica caerulescens caerulescens*. See 160, 320.

- 513—(633) **YELLOW-BREASTED CHAT**—*Icteria virens virens*.
See 324.
- 514—(642) **GOLDEN-WINGED WARBLER**—*Vermivora chrysoptera*.
See 319.
- 515—(657) **MAGNOLIA WARBLER**—*Dendroica magnolia*. See 156,
158, 323.
- 516—(655) **MYRTLE WARBLER**—*Dendroica coronata*. See 320.
- 517—(681a) **WESTERN YELLOW-THROAT**—*Geothlypis trichas occi-*
dentalis—The Western Yellow-throat is ascribed to the arid regions of the
western United States; not on the Pacific coast.
- 518—(636) **BLACK AND WHITE WARBLER**—*Mniotilta varia*. See
155, 183, 318.
- 519—(673) **PRAIRIE WARBLER**—*Dendroica discolor*. See 321.
- 520—(658) **CERULEAN WARBLER**—*Dendroica caerulescens*. See 320.
- 521—(676) **LOUISIANA WATER-THRUSH**—*Seiurus motacilla*. See 318.
- 522—(674) **OVEN BIRD**—*Seiurus aurocapillus*. See 166, 318.
- 523—(659) **CHESTNUT-SIDED WARBLER**—*Dendroica pensylvanica*.
See 161, 162, 322.
- 524—(652) **YELLOW WARBLER**—*Dendroica aestiva aestiva*. See 321.
- 525—(637) **PROTHONOTARY WARBLER**—*Prothonotaria citrea*.
See 318.
- 526—(725) **LONG-BILLED MARSH WREN**—*Telmatodytes palustris*
palustris. See 328.
- 527—(718) **CAROLINA WREN**—*Thryothorus ludovicianus ludovicianus*.
See 328.
- 528—(704) **CATBIRD**—*Dumetella carolinensis*. See 172, 327.
- 529—(724) **SHORT-BILLED MARSH HEN**—*Cistothorus stellaris*.
See 328.
- 530—(719) **BEWICK'S WREN**—*Thryomanes bewicki bewicki*—Inhabits
the eastern United States from northern Illinois, southern Michigan and
central Pennsylvania to Arkansas, northern Mississippi and central
Alabama. Has occurred in Ontario. Nests in holes in trees, stumps,
fences, bird boxes, tin cans, etc., filling the cavity with grass and rootlets.
Eggs, speckled and usually wreathed about the large end with reddish
brown and purplish.
- 531—(705) **BROWN THRASHER**—*Toxostoma rufum*. See 173, 327.
- 532—(721) **HOUSE WREN**—*Troglodytes aedon aedon*. See 175, 328.
- 533—(722) **WINTER WREN**—*Nannus hiemalis hiemalis*. See 174, 328.
- 534—(703) **MOCKINGBIRD**—*Mimus polyglottos polyglottos*. See 327.
- 535—(746) **VERDIN**—*Auriparus flaviceps flaviceps*—Range—Mexican
border of the United States, north to Colorado and Nevada. Abundant in
chaparral brush, locally throughout its range. Its large, globular nest,

made of twigs and weeds, softly lined with fur and feathers, is found in bushes at low elevations from the ground. Eggs, three to six; pale greenish blue, speckled and dotted with reddish brown.

536 (727) **WHITE-BREASTED NUTHATCH**—*Sitta carolinensis carolinensis*. See 179, 182, 329.

537 (726) **BROWN CREEPER**—*Certhia familiaris americana*. See 180, 328.

538 (731) **TUFTED TITMOUSE**—*Basolophus bicolor*. See 329

539 (748) **GOLDEN-CROWNED KINGLET**—*Regulus satrapa satrapa*. See 176, 330.

540 (735) **CHICKADEE**—*Penthestes atricapillus atricapillus*. See 184, 329.

541 (749) **RUBY-CROWNED KINGLET**—*Regulus calendula calendula*. See 177, 178, 330

542 (751) **BLUE-GREY GNATCATCHER**—*Poliophtila caerulea, caerulea*. See 230.

543 (728) **RED-BREASTED NUTHATCH**—*Sitta canadensis*. See 181, 329

544 (766) **BLUEBIRD**—*Sialia sialis sialis*. See 187, 332

545 (756) **VEERY—WILSON THRUSH**—*Hylocichla fuscescens fuscescens*—The nest of the Veery, or Wilson Thrush, is placed on or near the ground, in the midst of a clump of ferns or low shrubbery, and is constructed of woven bark strips, grasses, etc. Between the lining and outside of the nest is usually a layer of mud or well-rotted wood. See 130, 185, 331.

546 (758a) **OLIVE-BACKED THRUSH**—*Hylocichla ustulata swainsoni*. See 331.

547 (768) **MOUNTAIN BLUEBIRD**—*Sialia currucoides*—Range—Rocky Mountain region, breeding from New Mexico north to Great Slave Lake; winters in southwestern United States and Mexico. Common in the greater part of its range, and found west to the Sierra Nevadas in California. Like the eastern Bluebird, nests in holes in trees, or wherever it can find a suitable cavity or crevice. Its eggs are slightly larger than those of the other Bluebirds, and have a slightly greenish tint.

548 (755) **WOOD THRUSH**—*Hylocichla mustelina*. See 331.

549 (761) **ROBIN**—*Planesticus migratorius migratorius*. See 186, 332.

550 (701) **DIPPER—WATER OUZEL**—*Cinclus mexicanus unicolor*—Range—Mountains of western North America from Alaska to Central America. Frequents sides of mountain streams, where it feeds on aquatic insects and small fish. Although the Dipper is not equipped with webbed feet, it swims on or under the water with the greatest ease and rapidity, using its wings as paddles. Has a Thrush-like bill and the teetering habits of the Sandpiper. Makes its nest, a round structure of green moss, lined with fine grass, and with an entrance on the side, among the rocks, along the banks of swiftly flowing streams and sometimes beneath falls.

551 (765) **WHEATEAR**—*Saxicola oenanthe oenanthe*—Casual in Alaska in summer. Makes its rude nest of weeds, moss or grasses, lined with hair or feathers. Eggs, pale greenish blue. See 191.

552—(763) **VARIED THRUSH**—*Ixoreus naevius naevius*—Range—Pacific coast from northern California to Alaska; winters from southern Alaska to the Colorado River; frequently straggles eastward in the winter time. Nests at low elevations in trees, the shallow structure being of moss, twigs, weeds and grasses. Eggs, greenish blue, sharply but sparingly spotted with dark brown.

553—(759b) **HERMIT THRUSH**—*Mylocichia guttata pallasi*. See 331.

554—**NEST OF THE CEDAR WAXWING**—*Bombycilla cedrorum*. See 149, 315, 500.

555—**NEST OF KING RAIL**—*Rallus elegans*. See 251, 383.

556—**NEST OF LEAST BITTERN**—*Ixobrychus exilis*. See 46, 249, 373.

557—**NEST OF REDHEAD**—*Mareca americana*. See 26, 242, 358.

558—**EXAMPLES OF EGGS**—(1) Catbird. (2) Robin. (3) Chickadee. (4) Long-billed Marsh Wren. (5) Brown Thrasher. (6) Yellow Warbler. (7) Red-eyed Vireo. (8) Loggerhead Shrike. (9) Cedar Waxwing. (10) Cliff Swallow. (11) Martin. (12) Rose-breasted Grosbeak. (13) Scarlet Tanager. (14) Towhee. (15) Song Sparrow. (16) Chipping Sparrow. (17) Vesper Sparrow. (18) Great-tailed Grackle. (19) Bronzed Grackle. (20) Baltimore Oriole. (21) Orchard Oriole. (22) Meadow Lark. (23) Red-winged Blackbird. (24) Blue Jay. (25) Prairie Horned Lark. (26) Wood Pewee.

559—**EXAMPLES OF EGGS**—(1) Crested Flycatcher. (2) King Bird. (3) Nighthawk. (4) Crow. (5) Red-headed Woodpecker. (6) Yellow-billed Cuckoo. (7) Audubon's Caracara. (8) Black-billed Magpie. (9) Kingfisher. (10) Screech Owl. (11) Turkey Vulture. (12) Gamble's Partridge. (13) Bob-white.

560—**EXAMPLES OF EGGS**—(1) Spotted Sandpiper. (2) Bartramian Sandpiper. (3) Marbled Godwit. (4) King Rail. (5) American Coot. (6) Least Tern. (7) Sooty Tern. (8) Common Murre. (9) Black Tern. (10) Herring Gull.

561—**NEST OF AMERICAN GOLDFINCH**—*Astragalinus tristis tristis*. See 131, 132, 304, 305, 488.

562—**NEST OF FLORIDA GALLINULE**—*Gallinula galeata*. See 50, 253, 379.

563—**NEST OF WILSON PHALAROPE**—*Steganopus tricolor*. See 256, 382.

564—**NEST OF SHOVELLER DUCK**—*Spatula clypeata*. See 22, 240.

565—**ROBIN REDBREAST**—*Erithacus rubecula*. The commonest of the British warblers. Range—Europe, northern Africa, and eastern Asia. See 204.

566—**DOUBLE YELLOW-HEADED PARROT**—*Amazona oratrix*—A native of Mexico; especially common in the wooded bottoms of La Cruz River. Feeds on mangoes and nuts. Makes no nest, depositing its eggs in hollow trees.

567—**COCK-OF-THE-ROCK**—*Rupicola crocea*—A native of Southern America and Guinea. Frequents banks of rocky streams and deep, sombre ravines, where it traverses the ground with much rapidity by means of its powerful and well-developed legs. Very shy and retiring. These birds

court the females by assembling for dances in certain cleared spaces, each displaying its showy plumage by queer antics until chosen by some observant hen. The skins and feathers are valuable, and are much sought after for decorative purposes. The nest is composed of small sticks, splinters of wood, and dry grasses, laid loosely in a hole in the rock.

568—**LYRE BIRD**—*Menura superba*—HAB. as its habitat New South Wales and Queensland. Frequents almost inaccessible and precipitous sides of gullies and ravines, covered with tangled masses of creepers and umbrageous trees. Very shy and difficult to procure, though its loud, liquid call may be heard reverberating over the gullies for at least a quarter of a mile; it also has an inward warbling song, the lower notes of which can only be heard within about fifteen yards. The steep and rugged sides of the gullies present no obstacle to the bird's long legs and muscular thighs, and it is also capable of extraordinary leaps. The tail is often upwards of ten feet in length and is seen in its greatest beauty between June and September. It is then shed and does not reappear until the ensuing February or March. Insects, particularly centipedes and coleoptera, form the principal part of the bird's food.

569—**SKYLARK**—*Alauda arvensis*. See 188, 295.

570—**MEXICAN MOT MOT**—*Momotus subrufescens*—Habitat—Southern Mexico to Paraguay. Feeds on small reptiles, insects and fruits. The Mot Mot is found in gloomy forests, where it sits almost motionless, on the underwood. Nests placed in holes in banks, usually along water-courses.

571—**NIGHTINGALE**—*Luscinia megarhynchos*. See 206.

572—**INDIAN ROLLER**—*Coracias indicus*—A native of northeastern Africa and Senegambia. Given the name "Roller" because of its habit of rolling or turning over in its flight like a Tumbler Pigeon. A gregarious bird, nesting in company in ruins, in burrows, in holes in rock, and in steep cliffs.

573—**YELLOW-THROATED TOUCAN, OR KEELED TOUCAN**—*Ramphastos piscivorus*—Found in tropical America. Its monstrous bill, which seems entirely out of proportion to the size of the bird, is honey-combed, and not so heavy as it appears. The Yellow-throated Toucan feeds principally on fruits, but also on eggs, fish, and even small birds. In striking contrast to its easy, graceful flight is its awkward, hopping gait.

574—**GOLDEN PHEASANT**—*Chrysolophus pictus*—A native of western and southern China and Thibet, but has been introduced in England and America. A great favorite, not only for its splendid plumage, but for the excellence of its flesh, which is said to surpass in delicacy that of the common Pheasant. The feathers of the crest and ruff are of great value to the fly-fisher, as many of the best artificial baits owe their tempting beauty to them.

575—**RING-NECKED PHEASANT**—*Phasianus torquatus*—The Ring-necked Pheasant, a native of China, often incorrectly called the Chinese Pheasant, has been introduced in England and America, and is now abundant in some localities. Destructive in that it follows rows of newly planted corn, digging up the seeds with its powerful beak; harmful, also, to standing grain, grapes, etc. On the other hand, it does much good by destroying large quantities of grasshoppers, June beetles, caterpillars and weed seeds. Eggs, buff or greenish buff color, unmarked.

576 - BLACK GROUSE—*Lyrurus tetrix*—The Black Grouse, or Black Cock, a native of southern Europe and Asia, has been liberated in England and in America, with considerable success. Its loud, resonant note can be heard at a considerable distance, this crowing sound being accompanied by a harsh, grating, stridulous kind of cry, which has been likened to the noise produced by the whetting of a scythe. The tail is lyre-shaped, and the feet are feathered to the toes.

577 - SILVER PHEASANT—*Gennaes nycthemerus*—An inhabitant of China. Like the Golden Pheasant, it has been introduced in Britain and in parts of the United States. A very powerful bird, but its weight is generally too great in proportion to its strength of wing; so that it does not readily raise itself from the ground, thereby running the risk of being devoured by carnivorous quadrupeds.

578 - GREEN JAPANESE PHEASANT—*Phasianus versicolor*—Occurs in all the Japanese Islands, save Yezo. Terrestrial in habits, and a swift runner. Feeds on ants, maggots, acorns, seeds, berries, etc. The flesh is edible and highly esteemed.

579 - AUSTRALIAN GRASS PARAKEET—*Melopsittacus undulatus*—Also known as the Zebra Parakeet. A native of Australia. It is an inland bird, being very seldom seen between the mountain ranges and the coasts. Derives its name of Grass Parakeet from its fondness for the grasslands, where it feeds upon grass seeds. Has a gentle, warbling song, quite unlike the rough, screeching sounds usually heard from Parrots. This song belongs only to the male bird. The bird has been imported in great numbers as an inhabitant of our aviaries.

580 - CROWNED PIGEON—*Guara coronata*—The Crowned Pigeon, conspicuous for its great size and splendid crest, is found in Java, New Guinea, and the Moluccas. Bows its head so low, when it has uttered its loud and sonorous cry, that its crest sweeps the ground. The flesh of this bird is quite edible.

581 - ROSE COCKATOO—*Cacatua roseicapilla*—An arboreal native of South Australia. Gregarious and noisy, but not so imitative as the true Parrot.

582 - RED BIRD OF PARADISE—*Paradisaea rubra*—This beautiful bird is a native of New Guinea. Very retiring in its habits, concealing itself during the day in the thick foliage of the teak tree, and only forsaking its shelter at sunrise and sunset, for the purpose of obtaining food. It is highly esteemed by hunters for its beautiful plumage.

583 - PEACOCK—*Pavo cristatus*—A native of the Indian Peninsula and Ceylon, in some parts of which it is very abundant. Its domestication dates from very remote times. Called by the Greeks and Romans the "Bird of Juno." The Peacock has a bad reputation as a worker of mischief in gardens.

584 - HOMING PIGEON—The Homing, or Carrier, Pigeon has the homing instinct most remarkably developed, returning to its home with messages, usually by the most direct route, for even hundreds of miles.

585 - CANARIES—*Carduelis canaria*—Canary Islands, the Azores and Madeira. The natural color of the Canary is not the customary bright yellow, but a sort of dappled olive green, black and yellow. Bird fanciers, however, have been able to procure birds of every tint between the three colors.

586 **RESPLENDENT TROGON**—*Calurus resplendens*—A native of Central America. Fond of inhabiting the dense forests of southern Mexico, generally haunting the topmost branches of the loftiest trees. Clings to the boughs like a Parrot. Has a singularly delicate skin, upon which the plumage has a very slight hold. Feeds on berries, fruits and a few insects.

587—**RHEA**—*Rhea americana*—The Rhea, or South American Ostrich, is about six feet in height, its bulk being only about half as great as that of the African Ostrich. Inhabits Patagonia, the Argentine Republic and the more remote plains of Uruguay and Paraguay. A swift runner, but will take to water and swim when pressed.

588—**QUARTZ**—(Obscurely crystalline)—a. Bloodstone, polished (India). b. Tiger Eye, polished (South Africa). c. Chrysoprase, polished (Arizona). d. Agate and Cornelian, polished (Lake Superior). e. Jasper (Germany). f. Ribbon Jasper, polished (Siberia).

589 **MINERALS**—a. Hornblende. b. Crocidolite. c. Malachite. d. Rose Quartz. e. Pink Tourmaline, Rubellite. f. Agate. g. Amethyst. h. Onyx. i. Sulphur.

590—**DIAMOND AND CORUNDUM**—a. Sapphire Crystal. b. Ruby Crystal. c. Bort. d. Diamond in Matrix (Brazil). e. Diamond in Matrix (South Africa). f. Spinel crystal, Rubicelle. g. Spinel Crystal, Hutan-ruby. h. Cut Sapphire. i. Cut Ruby. j. Black Diamond, Carbonado (Brazil).

591 **BIRTH STONES**—a. Garnet (January). b. Diamond (April). c. Ruby (July). d. Opal (October). e. Amethyst (February). f. Emerald (May). g. Sardonyx (August). h. Topaz (November). i. Bloodstone (March). j. Moss Agate (June). k. Sapphire (September). l. Turquoise (December).

592—**OLD FAITHFUL GEYSER**—Yellowstone National Park—Yellowstone National Park, a great tract of land, sixty-two miles long and fifty-four miles wide, was set aside as a national park by Act of Congress, March 1st, 1872. The greater part is in Wyoming, though small portions lie in Montana and Idaho. The central part consists of a broad volcanic plateau with an average elevation of 8,000 feet above sea level. Surrounding this on all sides are mountains with peaks and ridges from two thousand to four thousand feet above general level. Its geysers are the largest in the world, excelling those of New Zealand and Iceland. One of the most beautiful, and also one of the most regular in erupting, is Old Faithful, which throws its stream to a height of 125 to 150 feet, at intervals of about 65 minutes. Each eruption lasts about four and a half minutes.

593—**GARNET AND OTHER MINERALS**—a. Almandine Garnet (Alaska). b. Essonite Garnet, cut. c. Demantoid Garnet, cut. d. Demantoid Garnet (Ural Mountains). e. Almandine Garnet, cut. f. "Cape Ruby," cut. g. Essonite Garnet and Diopside (Italy). h. Chrysolite Crystal. i. Epidote (Knappenwand, Austria). j. Epidote, cut. k. Chrysolite, cut. l. Pyrope Garnet (Bohemia).

594—**AGATE**—a. Banded Agate (Brazil). b. Banded Agate (Lake Superior). c. Moss Agate. d. Clouded Agate.

595—**QUARTZ (Crystalline)**—Rutilated Quartz, Polished (Brazil). b. Rose Quartz (Black Hills). c. Smoky Quartz (Switzerland). d. Amethyst (Virginia). e. Amethyst (Montana).

596—**AMBER, MALACHITE, LAPIS-LAZULI AND AZURITE**—a. Lapis-lazuli, polished (Siberia). b. Amber, polished, showing insects enclosed (Coast of Baltic Sea). c. Malachite and Azurite, polished (Arizona). d. Malachite, polished (Australia). e. Amber, rolled pebble (Coast of Baltic Sea). f. Malachite, polished (Ural Mountains). g. Malachite (Arizona).

597 **EASTER LILY**—*Lilium harrisii*—The Easter Lily was originally introduced from Bermuda, but it is now extensively cultivated in nearly all countries.

598—**CARNATIONS**—*Dianthus caryophyllus*—It is not known when the Carnation was introduced as a garden flower into England, but by the end of the sixteenth century innumerable varieties were cultivated. The Carnation was the first plant upon which hybridization was practically performed.

599—**HYACINTH**—*Hyacinthus orientalis*—The Hyacinth is native to the Mediterranean region; known in the time of Vespasian and mentioned by Dioscorides. About 1596 it was introduced in England; since 1629 more than four thousand varieties have been developed.

600 **LIBERTY ROSES**—In its wild state the rose is generally single, its corolla consisting of one circle of roundish spreading petals. Under cultivation the petals commonly multiply at the expense of the stamens.

601—**LILY-OF-THE-VALLEY**—*Convallaria majalis*—Called *Convallaria* from the Latin, *convallis*, a valley, and *rica*, a mantle, in reference to the dense covering formed by the leaves. Grows in woods and on heaths throughout Europe and northern Asia; also found native in the Alleghanies. Blossoms in May. The Lily-of-the-Valley is a favorite in cultivation and several varieties have been produced.

602 **SENSITIVE PLANT**—*Mimosa pudica*—The plant is here shown both awake and asleep. At night each leaf curves downward, the leaflets folding together, and in daytime a slight touch causes them to assume the same position. The Sensitive Plant was introduced from tropical America in 1638, and is now easily grown in our temperate climate.

603—**CALLA LILY**—*Richardia africana* (*Richardia aethiopica*)—The Calla Lily, Egyptian, or Arum Lily, or Lily-of-the-Nile, was first given the name Calla by Pliny. Its native home is along the banks of the Nile, where its glossy green leaves and waxen blooms abound during the season of high water. In the dry season the tops die down, fall over and protect the roots against the burning rays of the tropical sun; then with the coming of the spring freshets the bulbs come to life again. This lily is a favorite among the common house plants. It is closely related to the Indian Turnip, or Jack-in-the-Pulpit.

604—**GOLDEN-ROD**—*Solidago*—Range—From Maine, Ontario and Minnesota to the Gulf States. Common along shady roadsides and in moist woods and thickets from August to October.

605—**YELLOW LADY'S SLIPPER**—*Cypripedium pubescens*—Scarlet Painted Cup—*Castilleja coccinea*—The Yellow Lady's Slipper, Whip-poor-will's Shoe, or Yellow Moccasin Flower, is found in moist or boggy woods and thickets and on hilly ground, from Nova Scotia to Alabama, westward to Minnesota and Nebraska. Flowers from May to July.

The Scarlet Painted Cup, or Indian Paint Brush as it is also known, has as its preferred habitat the moist, sandy soil of meadows, prairies and mountains. Distribution from Maine west, and south to Virginia. Whole mountain sides in the Canadian Rockies are ablaze with these flowers, which range in color there from ivory white and pale salmon to deep maroon. Flowers from May to July.

608 **COCA**—*Erythroxylon coca* A small shrub of the mountains of Peru and Bolivia; cultivated in other parts of South America. The leaves have for many centuries been used by the natives as a stimulant, being mixed with plant ash and chewed. This shrub yields the cocaine used as a local anæsthetic by the surgeon and dentist. A. Flowering twig. 1, 2. Buds. 3. Flower. 4-5. Petals. 6-7. Stamens. 8. Pistil. 9. Section of ovary. 10. Flower with petals removed. 11. Section of same. 12. Fruit. 13. Section of same.

607 **LICORICE**—*Glycyrrhiza glabra* A perennial herbaceous plant. The juice of the underground part (roots and rhizomatous stems) is dried, becoming a black, brittle and sweet substance, used in the manufacture of licorice sticks, drops, lozenges, etc. A. Flowering twig. 1. Flower. 2-4. Petals. 5. Stamens. 6. Pistil. 7. Ovary. 8-9. Fruit. 10. Seed. 11, 12. Same in section.

606 **HOP** *Humulus lupulus* This creeping, twining plant is a dioecious perennial, indigenous in temperate Europe, Asia and North America. The flowers are used in brewing, medicine, etc. A. Staminate flowers. B. Pistillate flowers. C. Fruiting branch. 1. Staminate flower. 2. Calyx of five sepals. 3-4. Stamens. 5. Pollen. 6. Pistillate flowers in head. 7-12. Pistil and bracts. 13. Fruiting bract. 14-20. Views of achene and embryo.

609 **DANDELION**—*Taraxacum officinale* Known also as Blowball, Lion's-tooth, or Peasant's Clock. This native of Europe, as an immigrant to this continent, has extended its range from the Atlantic to the Pacific. The seeds of the Dandelion are carried by ship, in the hay used for packing, to foreign lands, where the plant readily adapts itself to the conditions of the country to which it is taken. The leaves, while young and tender, may be used as greens. All parts contain a bitter milky juice that exudes freely whenever the plant is broken; this is often used for medicine.

610 **POPPIES**—*Papaver somniferum* A. White Poppy B. Carnation Poppy. 1. Pistil and stamens. 2. Stamens (magnified). 3. Grain of Pollen. 4. Pistil. 5. Cross section of pistil. 6. Ripe Capsule. 7-9. Seed. In India and China the Opium Poppy, chiefly cultivated, has white petals and seeds; that in Asia Minor, purple petals and dark seeds.

611 **TOBACCO PLANT**—*Nicotiana tabacum*—Extensively cultivated in the warmer countries, and successfully grown as far north as southern Ontario. The leaves are sometimes gathered singly; but more commonly the stalks are cut and suspended on sticks under shelter for drying, which requires several weeks. The leaves are then stripped and sorted, tied in bundles and "bulked" in compact circular heaps to secure a slight fermentation, which develops the properties valued; they are then packed for the manufacturer. A. Flower cluster. 1. Corolla and stamens. 2. Stamens. 3. Pollen. 4. Pistil and stigma. 5-8. Ovary in section. 7-8. Fruit. 9-10. Seed.

612—**MANDRAKE**—*Podophyllum peltatum*—Known also as the May Apple, Hog Apple, or Wild Lemon. Belongs to the Barberry family. On this continent the Mandrake is to be found in rich, moist woods, from Quebec to the Gulf of Mexico westward to Minnesota and Texas. It

blooms in May, and in July there is a sweetly marked, many-seeded fruit, resembling the yellow Egg tomato. A. and B. Plant in flower. 1. Bud. 2. Flower. 3. Stamen. 4-5. Ovary. 6-7. Seed.

613 -THYME—*Thymus vulgaris* The common garden Thyme is a native of the Mediterranean region. Largely cultivated as a seasoning for soups, sauces, etc. From the oil, to which the fragrance of these plants is due, Thymol, used as a disinfectant and germicide, is distilled. In the southern States this has proved useful in destroying the ravaging "Hook Worm." A. Plant in flower. 1-2. Leaf. 3-9. Flower. 10. Stamen. 11. Pollen. 12. Pistil and calyx. 13. Pistil. 14-15. Section of ovary. 16. Calyx. 17. Seed. 18-19. Sections of same.

614 CUBEB—*Piper cubeba* A small, climbing shrub, cultivated in tropical countries and islands. The use of a small, peppery fruit as a spice and medicine is waning. A. Leaf and fruit. B. Flower with leaves and fruit. 1-2. Staminate flowers. 3-4. Pistillate flower and fruit. 5-7. Section of same. 8. Seed. 9. Section of same.

615 GINGER—*Zingiber officinale* A tall, branched plant, extensively cultivated in Jamaica; also in China, India and southern Africa. The Jamaica Ginger is the most highly esteemed. 1. Pistil. 2. Flower expanded. 3. Bract. 4. Stamens. 5. Pollen. 6. Pistil. 7. Stamen. 8-9. Ovary in sections.

616 VANILLA—*Vanilla planifolia* A. Flowering twig. 1-3. Corolla. 4-5. Pistil. 6-8. Stamen. 9. Pollen. 10-11. Fruit. 12-13. Seed. The Vanilla plant is largely produced in Mexico, where it grows in both the wild and cultivated state. Grows also in various parts of Central and South America, and more or less in other warm countries. The pods are gathered green, dried in the shade, and cured in oil.

617 BLACK PEPPER—*Piper nigrum*—Cultivated in India and other tropical countries. A climbing, trailing plant, thriving best when somewhat shaded. In cultivation it is supported by poles or small trees planted for the purpose. Two crops a year are yielded. The berries, when ripe, are bright red, becoming wrinkled and black when dried.

618 CLOVE—*Eugenia caryophyllata* (*Caryophyllus aromaticus*)—A. Flowering branch. 1. Flower bud. 2. Sectional view of same. 3. Stamens. 4. Pollen. 5. Ovary and section of same. 6. Seed. 7-9. Ovule and sections of same. The clove is a much cultivated, handsome tree, found in tropical countries, especially islands. The flowers are gathered and dried before they have opened. Every part of the plant abounds in the volatile oil for which the flower buds are prized.

619—TEA—*Camellia thea* (*Thea sinensis*)—Extensively grown in India, China and Japan. It was not until the seventeenth century that tea became known in Europe. The shrub grows naturally from twenty to thirty feet high, but in cultivation it is trimmed down to five or six feet.

620 -NUTMEG—*Myristica fragrans*—A. Flowering branch. 1. Pistil surrounded by stamens. 2. Longitudinal section of same. 3. Cross section of same. 4. Pollen. 5. Ovary. 6. Section of same. 7-8. Mature fruit. 9. Nutmeg covered with mace. 10. Bare nutmeg. 11. Sectional view. 12. Embryo; see also 11. The nutmeg, a medium-sized tree, is extensively cultivated in tropical countries, especially islands, of both hemispheres. The seed is thoroughly dried, the shell then cracked, and the olive-shaped kernel, commonly treated with lime for preservation, becomes the nutmeg of commerce. The fruit itself, which somewhat resembles the peach, dried, becomes the mace, commonly used for flavoring.

621. **COFFEE**—*Coffea arabica*—The Coffee tree is extensively cultivated in tropical countries of both hemispheres. A native of Abyssinia, Arabia, and some parts of Africa. In its wild state it grows to a height of about twenty feet, but under cultivation it is not allowed to become more than from six to ten feet high. The bright scarlet fruit, which has the appearance of a small cherry, usually contains two cells, with one seed, or bean, in each. Three gatherings are made in a year.

622. **CINNAMON**—*Cinnamomum cassia*—Extensively cultivated in southeastern China, India, Sumatra, Java, etc. The wood furnishes the cassia lignia of commerce. 1-2. Flower. 3. Stamens. 4. Pistil. 5-7. Fruit.

623. **SUGAR CANE**—*Saccharum officinarum*—A. Plant (reduced). B. Part of stem, with leaf. C. Inflorescence. 1-6. Parts of flower. The sugar cane is a perennial, jointed, reed-like plant, six to twelve feet high, extensively cultivated in the southern States and West Indies. Propagated almost wholly from rhizomes and cuttings. The juice is crushed from the canes by means of heavy rollers; then purified and evaporated as soon as possible. The sugar is allowed to crystallize in the syrup, from which it is separated by centrifugal force, leaving the syrup as the molasses of commerce.

624. **POMEGRANATE**—*Punica granatum*—Native of western Asia, but now widely cultivated and naturalized in sub-tropical regions. Thrives in the southern United States, and can be grown, with moderate protection, even in the climate of New York State. In its wild state the Pomegranate is a thorny bush, but under cultivation it becomes a small, handsome tree, with the large, scarlet flowers, sometimes double. The pink pulp of the fruit has a peculiar, but pleasant, flavor. From the bark comes the coloring matter used for yellow morocco leather.

625. **STRAWBERRY**—*Fragaria chiloensis*—An herbaceous plant belonging to the Rose family. Botanically a false fruit, and not a berry at all, the edible part being the much enlarged fleshy torus, or receptacle, to which the numerous very small, rather hard fruits (seeds) are attached.

626. **PEAR**—*Pyrus communis*—A native of Europe. Belongs to the Rose family of the same class as the Apple. The wood of the Pear tree, having a compact, fine grain, is highly prized for cabinet and mill work.

627. **JONATHAN APPLE**—The Apple (*Pyrus malus*) is a false fruit, consisting mostly of fleshy calyx. It is now cultivated in nearly all temperate regions, in numerous varieties. Introduced in America from England in 1629.

628. **TOMATO**—*Lycopersicon esculentum*—An herbaceous plant, native of South America, but now extensively cultivated in temperate as well as tropical lands. Related to the potato. Botanically considered, the fruit is a berry. Often called the Love Apple.

629. **BANANA**—*Musa sapientum*—A large plant of the tropics. Has large, long leaves and reed-like stem, on which the heavy bunches of fruit are borne. Largely cultivated in the tropics, and one of the main sources of food supply there.

630. **ENGLISH GRAPES**—*Vitis vinifera*—The Grape, strictly speaking, is a berry, with from one to four seeds.

631. **PINEAPPLE**—*Ananas sativa*—A native of tropical America, cultivated in Florida and the West Indies. Called Pineapple because of its resemblance to a pine cone. The plant has a number of long, smooth-

edged, sharp-pointed, rigid leaves, springing from the root, from which a short flower stem is thrown up, bearing a single spike of flowers. From the top of the fruit grows a tuft of small leaves, capable of coming a new plant.

632—ORANGE (NAVEL)—*Citrus aurantium*—Extensively cultivated in the warmer countries of both hemispheres. A rather low branching evergreen, with thick, smooth leaves, and fragrant, white wax-like flowers. Trees in full bearing will yield from three thousand to ten thousand oranges a year. The Navel Orange is a freak, which is now grown most extensively in California; originated in South America.

633—CHERRY—*Prunus cerasus*—The Cherry is not a berry, but, like the Peach and Plum, a drupe, or stone fruit. Said to have been brought from Cerasus, in Pontus, to Italy, after the defeat of Mithridates by Lucullus, circ. 70 B.C. Introduced by the Romans into England about one hundred and twenty years later.

634—PEACHES—*Amygdalus persica*—Belongs to the same class of drupes, or stone fruits, as the Apricot, Almond, Plum and Cherry. It is generally cultivated where the climate is not too severe; the two chief varieties being the clingstone and freestone; these both have numerous sub-varieties. Originated in China, but introduced from Persia.

635—PERSIMMON—*Diospyron virginiana*—The Persimmon is a native tree of the southern United States. Its fruit is extremely astringent when green, some being sweet and edible when thoroughly ripe. The wood of the Persimmon tree is highly esteemed. This fruit is being brought into prominence in the United States at the present time.

636—NUTS—a. Almond—*Amygdalus communis*—The Almond tree is cultivated for its nuts in the Mediterranean region, in California, and to a limited extent in the southern States. It belongs to the Peach family. b. Chestnut—*Castanea vesca*—A native of western Asia, southern Europe, and the United States east of the Mississippi. c. Brazil Nut *Bertholletia excelsa*—Native of Brazil, Guiana and Venezuela. d. Filbert *Coryllus avellana*—The fruit of the wild and cultivated Hazelnut of Europe. e. Peanut *Arachis hypogea*—The Peanut, or Groundnut, is now cultivated in most warm climates and as far north as southwest Ontario. f. Pecan—*Carya oliviformis* (*Hicoria pecan*)—Abounds on rich bottom-lands from Illinois south and southwestward. g. Hickory—*Carya alba*—A North American tree. h. English Walnut—*Juglans regia*—Native from the Caucasus and Armenia to the mountains of northern India; extensively cultivated, and, in some places, naturalized, in temperate Europe; also grown in California.

637—ENGLISH WALNUT—*Juglans regia*—A. Branch-bearing staminate and pistillate flowers. B. Pistillate flowers. 1-2. Staminate flowers. 3. Stamens. 4. Pollen. 5. Pistil. 6. Longitudinal section of same. 7. Fruit, half of husk removed. 8-9. Sectional views of nut. 10. Kernel.

638—COCOA—*Theobroma cacao*—A small evergreen, native to Central America and Mexico. The Cocoa bean, a large cucumber-like fruit, contains numerous seeds, which, after fermenting and drying, are ground, flavored with vanilla, and made into cocoa and chocolate. The fat expressed constitutes cocoa butter. 1. Fruit. 2-3. Same in section. 4-8. Cocoa beans.

639—MAIZE, OR INDIAN CORN—*Zea mays*—A typically monoecious plant, belonging to the grass family. Probably a native of tropical America. There are a great many varieties in cultivation. The one represented is the Dent Corn.

640. **LEMON**—*Citrus Limenum* (*Citrus medica*)—Grown in tropical and sub-tropical countries; closely related to the Orange, Lime and Citron. Oil, or essence, of Lemon is extracted from the peel. The sourness of the berry-like fruit is due to the presence of citric acid.

641—**RED PEPPER**—*Capsicum annum*—A hardy, herbaceous plant, attaining a height of two or three feet, and belonging to the same family as the Potato and Tomato. The dried ripe or unripe fruit is used in Chili sauce, etc. From the ripe fruit, too, is manufactured cayenne pepper.

642—**EGG PLANT**—*Solanum esculentum*—An herbaceous plant, cultivated in field and garden. Has large, egg-shaped, tomato-like fruit, dark purple in color, or sometimes white or yellow. Also known as the Egg-apple or Mad-apple.

643 **EXAMPLES OF NUTS**—a. Butternut—*Juglans cinerea*—Also known as the White Walnut, and closely related to the Black Walnut. A native of America. The wood, though soft, is close grained and takes a fine polish. From the inner bark a brown dye is obtained. b. Butternut in husk. c. Edible Pine seeds. d. Cocoanut—*Sterculia alata* (*Cocos nucifera*)—The fruit of the Cocoa Palm, a tree of the tropical regions. Besides the nutritious meat and milk, cocoanut oil is obtained, and from this is made a soap, which may be used in sea water. e. Cross section of Black Walnut. f. Black Walnut *Juglans nigra* A common North American tree, the heavy, hard wood of which takes a beautiful polish. The oil derived from the nuts is used by painters to mix color, and the outer shell is used in dyeing.

644—**ALMOND**—*Amygdalus communis*—A. Flowering branch. B. Fruiting branch. 1. Longitudinal sections of flower. 2-2a. Petals. 3. Stamens. 4. Pollen. 5 Pistil. 6. Longitudinal view of ovary. 7. Cross section of same. 7a. Section of flower. 8. Nut. 9. Longitudinal section of same. 10. Almond meat. 11-12. Sectional views of same. See 636.

645 **QUINCE**—*Cydonia esculentum* (*Pyrus cydonia*)—A small, hardy tree, having a hard, sour fruit, which, however, has a pleasant taste when cooked with sufficient sugar. The seeds are highly mucilaginous. A. Flowering twig. B. Fruit. 1. Stipules. 2. Flower in section. 3. Stamens. 4. Pollen. 5-6. Stigmas. 7-8. Fruit in section. 9-11. Seeds. 12. Section of same.

646 **COTTON**—*Gossypium barbadense*—Though this species, which was found cultivated in the West Indies, from Mexico to Peru, and in Brazil, when America was discovered, has the same yellow flowers, with red centres, as the common cotton plant (*Gossypium herbaceum*), it is considered different. The common Cotton is native to southeastern Asia. About the ninth or tenth century its cultivation seems to have spread to China, and in the time of Alexander, to Greece and southern Europe, and thence to the United States. The first mention we have of Cotton as a crop in the American colonies is in a report published in 1666. While the Cotton plant is an annual in the United States, in warmer countries it may live for a number of years, attaining considerable size. A. Twig with bud and flower. 1. Flower with petals removed. 2. Stamen. 3. Pollen. 4-5. Ovary in section. 6. Fruit. 7. Seed with cotton. 8. Seed with cotton removed. 9-10. Section of seed. 11. Germ of young plant.

647 **SWEET FLAG**—*Acorus calamus* The Sweet Flag resembles in foliage the familiar Yellow Iris. It is a reed-like, herbaceous, perennial plant, found in marshy places in Europe, the United States and Canada. A. Root stalk. B. Flower stalk. 1-5 Flower and parts. 6 Ovary in section. 7. Stamen. 8. Pollen.

648. **IRISH MOSS**—One of the many seaweeds of the Atlantic coast. Blanc Mange is made from it. Also used for sizing. A-D. *Chondrus crispus*—related forms. E-F and 1-4. *Gilgertia mamillosa*—related forms.

649. **AMERICAN MISTLETOE**—*Phoradendron flavescens*—A parasitic plant found on trees, from central New Jersey, southward. Though similar, this is not the Mistletoe sold for Christmas decoration; the latter is imported from England. The white berries have a sticky juice, which permits them to be carried on the feet of birds, and thus to become deposited on the branches of trees, where they germinate.

650. **CACTI**—*Cactacea* Cacti, varying in size from small stems to trunks thirty to forty feet in height, are found almost exclusively in dry countries, usually in hot, stony and sandy regions. The thick, fleshy stems, in which water is stored for the dry season are usually covered with spines. Many Cacti have singular forms, and some have flowers of great beauty.

651. **CINERARIA**—*Senecio cruentus* (*Cineraria cruenta*) Native of the warmer countries. It makes a handsome house plant.

652. **TANKARD PITCHER PLANT**—*Nepenthes*—Unlike our northern Pitcher Plant, the pitcher of this plant has a lid. It is found in the tropics and is a climber. Some species attain a length of eight or ten inches. Like our own they trap insects for food.

653. **PRIMULA** The Primrose, a well-known house plant, is cultivated under many different forms.

654. **APPLE BLOSSOMS**—(*Pyrus malus*)—Among the early orchard flowers. Each blossom represents a possible apple.

655. **SNAILS**—a. *Epiphragmophora fidelis* (California). b. *Cyclophorus appendiculatus* (Philippines). c. *Polygyra albolabris* (United States). d. *Polygyra profunda* (United States). e. *Omphalina fuliginosa* (United States). f. *Cerion microstoma* (Cuba). g. *Clausilia macarana* (Dalmatia). h. *Helix pomatia* (Europe). i. *Acavus haemastomus* (India). j. *Nanina lamarkiana* (Philippines). k. *Achatinella* (Sandwich Islands). l. *Drymaeus multilineatus* (Florida). m. *Liguus fasciatus* (Florida). n. *Strophocheilus chilensis* (South America). o. *Glandina truncata* (Florida). p. *Cochlostyla intorta* (Philippines). q. *Helix nemoralis* (Europe).

656. **MARINE GASTEROPODS** a. *Murex radix* (Panama). b. *Murex adustus* (East Indies). c. *Murex trunculus* (Mediterranean Sea). d. *Murex pomum* (Florida). e. *Murex tribulus* (China). f. *Murex ramosus* (Indian Ocean). g. *Murex axicornis* (Amboina). h. *Murex bicolor* (Panama).

657. **POND SNAILS AND RIVER SNAILS**—a. *Physa gyrina* (United States). b. *Pleurocera elevatum* (United States). c. *Vivipara concoloroides* (United States). d. *Melania tetrica* (Viti Islands). e. *Planorbis trivolvis* (United States). f. *Ampullaria depressa* (United States). g. *Campeloma subsolidum* (United States). h. *Angitrema verrucosa* (United States). i. *Limnaea stagnalis* (United States). j. *Limnaea megasoma* (United States).

658. **STARFISH**—a. *Asterias ochracea* (California). b. *Asterias forbesii* (Rhode Island). c. *Nidorella armata* (Panama). d. *Asterias vulgaris* (Massachusetts). e. *Asterias forbesii* (Massachusetts). f. *Asterias miniata* (California).

659—**CEPHALOPODS** a. Beak of Octopus. b. Pearly Nautilus—*Nautilus umbilicatus* (New Caledonia). c. Paper Nautilus—*Argonauta tuberculata* (Indian Ocean).

660—**GEMS FROM LAND AND SEA**—a. Jade, variety Jadeite, carved (Burmah). b. Precious Coral, polished (Mediterranean Sea). c. Chrysoberyl (Russia). d. Fresh Water Pearl, grown to shell. e. Jade, variety Nephrite, polished (New Zealand). f. Pearls (Oriental). g. Precious Coral (Mediterranean).

661—**PELECYPODS (CLAMS)** a. Sunrise Shell (*Tellina radiata*). b. Cockle (*Cardium isocardia*). c. Mussel (*Mytilus edulis*). d. Fresh Water Clam (*Unio luteolus*). e. Spiny Oyster (*Spondylus princeps*). f. Pearl Oyster (*Margaritipora radiata*). g. Scallop (*Pecten dislocatus*). h. Oyster (*Ostrea lacerans*). i. Spiny Venus (*Cytheria lupinaela*).

662—**MARINE GASTEROPODS** a. *Cypraea pantherina* (Red Sea). b. *Buccinum undatum* (United States). c. *Tritonium olivarium* (Naples). d. *Lanthena communis* (Atlantic Ocean). e. *Cassia flammea* (Bahamas). f. *Fasciolaria distans* (United States). g. *Oliva irisans* (Amboina). h. *Chiton squamosus* (Jamaica). i. *Lottia gigantea* (California). j. *Conus marmoreus* (Polynesia). k. *Voluta musica* (West Indies). l. *Nassa glans* (Amboina).

663—**MARINE GASTEROPODS** a. *Cerithium aluco* (East Indies). b. *Turbo petholatus* (Indian Ocean). c. *Harpa nobilis* (Philippines). d. *Haliotis assimilis* (California). e. *Terebra lamarekii* (Sandwich Islands). f. *Crepidula fornicata* (United States). g. *Fissuridea listeri* (United States). h. *Littorina angulifera* (United States). i. *Bulla ampulla* (Philippines). j. *Mitra pontificalis* (Indian Ocean). k. *Nerita peloronta* (Florida). l. *Strombus auris-dianae* (Philippines).

664—**BUTTERFLIES**—a. *Terias nicippe*, Southern form. b. *Colias philodice*, Common in Ontario. c. *Meganostoma eurydice* (male), Southern. d. *Papilio photenus*, Southern. e. *Limenitis ursula*, United States. f. *Papilio ajax*, Occasional in Ontario. g. *Terias mexicana*, Southern. h. *Colias caesonia*, Occasional in Ontario. i. *Meganostoma eurydice* (female), Southern.

665—**COMMON ONTARIO MOTHS** a. Luna Moth—*Actias luna* (adult male). b. Larva. c. Pupa. d. Luna Moth (adult female). e. Cocoon. f. *Telea polyphemus* (adult male). g. Larva. h. Pupa. i. Eggs on Maple leaf. j. *Telea polyphemus* (adult female). k. Cocoon.

666—**BEETLES** a. *Chalenus sericeus*, Ontario. b. *Alaus myops*, Ontario. c. *Calosoma scrutator*, Ontario. d. *Lucanus elephas* (male), North America. e. *Libia grandis*, Ontario. f. *Pasimachus marginatus*, North America. g. *Cotalpa lanigera*, Ontario. h. *Cicindella repanda*, North America. i. *Cynastes titius*, Tropical. j. *Cicindella sex guttata*, Ontario. k. *Neorophorus orbicollis*, Ontario. l. *Cychrus angusticollis*, Ontario. m. *Cicindella lecontei*, Ontario. n. *Brenthus mantis*, Ontario. o. *Dicaelus purpuratus*, Canada. p. *Calosoma calidum*, Ontario. q. *Pasalus cornutus*, Ontario.

667—**LEAF BUTTERFLY**—*Kallima paralekta*—The Leaf Butterfly of India is very common in that country. The lower figure shows the insect, viewed from above, with wings outstretched, while the upper right hand figure shows the same Butterfly with wings folded over its back, so that only the under surface is seen. The very close imitation of a dried brown leaf is the insect's protection.

668 -SILK MOTHS—1. Silkworm eggs. 2. Fourth-stage worm. 3. Pupa in cocoon. 4. Cocoon. 5. Male Moth. 6. Female Moth. 7. Unspun silk. 8. Raw manufactured silk. 9. Manufactured silk. The eggs, which are deposited upon Mulberry leaves, hatch and grow for several weeks as Caterpillars or Silk Worms. These then spin about themselves the cocoon by turning their heads from side to side, and upward and backward, so that there is drawn from certain glands near the mouth a continuous thread of sticky material which hardens in the air as it is wound about the worm. The thread, which is unbroken from the beginning of the cocoon until its completion, is several thousand feet long, and is unwound after immersion in warm, soapy water. By this means the pupa is killed and the gum which holds the thread in place is dissolved. After the fibres from several cocoons are unwound they are carded into loose skeins of silk, which, after passing through many processes, become the finished product.

669 COMMON AMERICAN GRASSHOPPERS—a. *Hippiscus neglectus*. b. *Dissosteira carolina*. c. *Arphia tenebrosa*. d. *Schistocerca americanum*. e. *Melanoplus differentialis*. f. *Hippiscus tuberculatus*.

670—BUTTERFLIES a. *Argynnis alceatis*. Western United States b. *Physiodes nycetis*. Ontario. c. *Colias eurytheme*. Ontario. d. *Colias caesonia*. Ontario. e. *Danaus archippus*. Ontario. f. *Vanessa antiopa*. Ontario. g. *Pieris protodice*. Ontario. h. *Debis portlandia*. Occasional in Ontario. i. *Pyrausta huntera*. Ontario.

671 -MOTHS—a. Promethean Moth—*Callosamia promethea* (adult male). Ontario. b. Larva. c. Pupa. d. Promethean Moth (adult female). e. Cocoon. f. Cecropian Moth—*Samia cecropia* (adult male). g. Larva. h. Pupa. i. Eggs on maple leaf. j. Cecropian Moth (adult female). k. Cocoon.

672 -BUGS a. *Archimedes calcarator*. North America b. *Nezara hilaris*. North America. c. *Metapodius femoratus*. Ontario. d. *Oncopeltus fasciatus*. Ontario. e. *Leptoglossus phyllapus*. Ontario. f. *Conorhinus sanguisuga*. Ontario. g. *Ranatra* ("Water Scorpion"). Ontario. h. *Benacus griseus* ("Giant Water Beetle"). i. *Cicada septendecim* ("Seventeen Year Locust"). Ontario. j. *Galgulus* ("Toad Bug"). k. *Platycotis* ("Tree Hopper").

673 -LARGE-MOUTHED BLACK BASS—*Micropterus salmoides*—Known also as the Yellow Bass, or Green Bass. Found throughout Canada and the United States, east of the Rockies, and highly prized by amateur sportsmen. Most abundant in waters having a mud bottom in which aquatic plants flourish. In summer its favorite localities are under overhanging banks or holes among weeds, where it lies in wait for the frogs, fish and crustaceans, which constitute the greater part of its food. In cold weather it seeks deep places, often hibernating under rocks, sunken logs, or in the mud.

674—MASKALONGE — *Lucius masquinongy* Found in the St. Lawrence in the vicinity of the Thousand Islands, in Lake Erie and the Georgian Bay, and in the waters of the Trent valley, Lake Simcoe, Lake Scugog, and other inland lakes. Except in pairing time, the Maskalonge is a solitary fish, usually lying concealed among aquatic plants at the sides of channels, or in open lakes beneath shelving rocks, whence it darts upon every living thing coming within its reach, and small enough to become its prey. Sometimes attains an immense size, specimens ranging from thirty to fifty pounds in weight being captured every season, and specimens have been caught weighing from eighty to one hundred pounds.

675 **BROOK TROUT**—*Salvelinus fontinalis* Formerly found in all clear spring streams and lakes fed by them, throughout eastern Canada, but owing to the pollution of our waters and excessive fishing, it has restricted its range largely to the unsettled districts. Common in Lake Nepigon and some of the rivers in that district. Though commonly called the Brook Trout, it is really a Charr.

676 **SNAPPING TURTLE**—*Chelydra serpentina* Common throughout eastern Canada and the United States. The most courageous and pugnacious of all the turtles; rather poorly protected by its shell. Feeds on any living thing it can overpower; particularly destructive to fish and young waterfowl. Rarely leaves the water except to deposit eggs.

677 **HORNED TOADS (LIZARDS)**—*Phrynosoma cornutum* The Horned Toad inhabits the arid, sandy regions of the southwestern United States, from Texas to California, and southward into Mexico. When resting it digs its way into the loose sand, which it resembles in color, entirely concealing itself, or thrusting its head out as far as the circle of spines around the neck. Feeds on various insects and creeping things, which it swallows whole.

678—**YELLOW SUNFISH**—*Eupomotis gibbosus*—The Yellow Sunfish, or Pumpkin Seed, is very abundant in the waters of southern and central Ontario, ranging to Lake Huron. In May and June, the spawning season, the fish resort to shallow water, where the ova are deposited in nests scooped out in the sand or mud by the action of the fins. The males keep guard until the young are hatched, driving off all intruders as well as promoting the circulation of the water by fanning with the ventral fins and tail.

679 **GAR PIKE**—*Lepisosteus osseus*—The Gar Pike, Gar fish, or Bill fish, is generally distributed from the upper St. Lawrence, through the Great Lakes and their tributaries, to the head of Lake Huron. Spawns in late spring or early summer, running up the larger streams for that purpose. The Gar Pike, which is about four feet in length, is valueless as a food fish.

680—**RAINBOW TROUT**—*Salmo irideus*—A western form of Trout, occurring on the Pacific coast.

681 **GILA MONSTER**—*Heloderma suspectum*—A gaudy lizard, about two feet in length, found in the deserts of southwestern America and in northern Mexico. A stupid, slow-moving creature, whose bite is sufficiently venomous to inflict a painful, but not fatal, wound. The name is pronounced "He-la."

682 **COLLARED LIZARD**—*Crotaphytus collaris* Also known as the Kangaroo Lizard. Found in the arid, sandy regions of southwestern America and also Mexico. The Collared Lizard has a peculiar habit of rising upon its hind legs and running fairly rapidly.

683—**PRONG-HORNED ANTELOPE**—*Antilocapra americana* Formerly its range extended from the Rocky Mountains eastward through Alberta to western Manitoba. Found in the mountain parks of Wyoming and Colorado, and in the deserts of southwestern States. Fast becoming extinct. The Prong-Horned Antelope is the only living mammal possessing hollow horns (growing over a bony core) which sheds them annually. It is also the only animal possessing a hollow horn which bears a prong, or bifurcation. Has no "dew claws," as other ruminant animals have.

681—COLLARED PECCARY—*Tagassu angulatum*—The Peccary is found in Mexico and South America. Feeds on acorns and nuts, edible roots and tubers, and sometimes upon the bark of young trees.

685 ROCKY MOUNTAIN BIG-HORN SHEEP—*Ovis canadensis*—Habitat The Rocky Mountains to the "bad-lands" of western North Dakota, and from the northern States of Mexico to northern British Columbia. Reaches its finest development in southeastern British Columbia.

686 AMERICAN ELK, OR WAPITI—*Cervus canadensis*—Essentially a timber-loving animal, its ideal home being the timbered foothills of the mountains of the west, up to 8,000 feet. Formerly found from Virginia and New York to Oregon, and from northern Manitoba to the Gulf of Mexico. In its wild state the Elk feeds on grasses, weeds, leaves and twigs of various trees and shrubs.

687 ALASKAN MOOSE—*Alces americanus alacensis*—A native of northern Europe and America, and the largest of the deer family, attaining a height of seven feet at the shoulders. The horns are widely palmated at the extremities and do not reach their full development until the fourteenth year. These enormous horns are no barrier to the progress of the Moose through the woods, for when it runs it throws its horns well back upon its shoulders. The Moose is a capital swimmer, and during the summer months spends a considerable portion of the time in the water. The skin is thick and has been manufactured into bullet-proof clothing. The flesh is palatable.

688 MOUNTAIN ZEBRA—*Equus Zebra*—The Mountain Zebra, which has been nearly exterminated by man, though now carefully protected, inhabits the mountains of Cape Colony. Owing to its wariness, the Zebra, which is dissimilar to the domestic horse in the form of the mane and tail, size of the hoof and remarkable coloration, has never been domesticated.

689 TWO-HORNED GIRAFFE—*Giraffa camelopardalis*—The Giraffe's habit of browsing upon the foliage of trees and the constant reaching upward have caused the lengthening of the neck and legs until the present extreme condition has been brought about. A native of Africa.

690 AMERICAN BISON, OR BUFFALO—*Bison Bison*—The largest and best known of all American animals; the female is usually much smaller than the male. What was originally the universal herd was cut in two by 1870, by the completion of the Union Pacific Railway, and the subsequent construction of the C.P.R. made the Bison accessible on all sides; so that the only herds to be seen now are in Government parks.

691 INDIAN, OR ASIATIC, ELEPHANT—*Elephas asiaticus*—The Indian Elephant differs from the African form in the smaller size of its ears and tusks, and its lighter color. It is the universal Elephant of captivity, the African species being rare. The Elephant's trunk serves both as upper lip and as nostrils, and in this way the odors of foods can be detected very delicately.

692 PYGMY ANTELOPE—*Saltrara*—The Pygmy, or Dwarf Antelope is found in South Africa, where it is at home in the forests and thickets, or domesticated near the homes of settlers. It is the smallest of all horned animals, not exceeding a Hare in size; a close relative of the Chamois and the American Prong-Horned Antelope.

693—ASIATIC, OR BACTRIAN, CAMEL—*Camelus bactrianus*—Has two humps on the back. Being large and robust, and wearing a fairly thick coat of fur, it is able to live in colder climates and more desolate regions

than those inhabited by the single-humped African Dromedary. The development of the chambered hump, which makes it possible for these animals to store up food and moisture sufficient to last for a considerable period, makes them very valuable as beasts of burden in arid regions.

694—**FOX SQUIRREL**—*Sciurus ludovicianus*—The northern Fox Squirrel is here shown. Found in the southwestern United States. It is similar in color to the southern form, though smaller and without white markings. Lives in tall trees, in a hollow trunk, or, in summer, in an outside nest of leaves.

695—**MUSKRAT**—*Ondatra zibethica*—The largest and most valuable member of the family of rats. A native of North America. Feeds largely on vegetable substances. See 216.

696—**GROUND HOG**—*Arctomys monax*—The Ground Hog, or Woodchuck, is essentially a digger, as indicated by the shape of the body, the size and length of the legs and the strong toe-nails. Frequently makes his home on a hillside; sometimes under a barn. Usually more than one entrance to the burrow, but seldom more than three. The living-room is not at the lowest part of the tunnel, so that the rain does not drain into it. The Ground Hog is strictly herbivorous, and semi-nocturnal. Destructive to farm crops, especially garden stuff. See 229.

697—**GREY RABBIT**—*Lepus nuttalli mallurus*—The Grey Rabbit, Cottontail, or Wood Hare, ranges from New England to Minnesota, and southward to Central America, varying slightly in different localities. Has gradually extended its range over Ontario, wherever the land is under cultivation, except the extreme northern and eastern portions. Its home is usually a burrow in the ground, or a deep recess under the roots of an upturned tree. Feeds on vegetation, and sometimes does damage to young orchard trees by stripping off the green bark.

698—**CHIPMUNK**, — *Tamias striatus*—The Chipmunk, or Ground Squirrel, here shown, is the eastern variety, generally distributed throughout Ontario. It is distinguished by the pronounced white stripe along the side. Makes its home, to which there is frequently more than one entrance, on the ground in a pile of stones, or under an old stump.

699—**FLYING SQUIRREL**—*Sciuropterus volans*—Common in southern Ontario, though not often seen because of its nocturnal habits; it never ventures from its retreat, in some hollow tree, until after sunset. This animal does not really fly, but the skin along the side is capable of expansion, so that it acts as a parachute. During the winter the Flying Squirrel lies dormant, retiring to its nest in November and not reappearing until about the beginning of April. See 223.

700—**STRIPED GOPHER**—*Citellus tridecemlineatus*—Common on the prairies of Manitoba, Saskatchewan and west to the Rocky Mountains. A burrowing animal, decidedly injurious in cultivated districts.

701—**GREY SQUIRREL**—*Sciurus carolinensis*—Formerly abundant in all the hardwood forests of southern and western Ontario, but owing to the cutting down of the woods and constant persecution, their numbers have become very much reduced. Specifically the Grey and Black Squirrels are identical. See 221.

702—**BEAVER**—*Castor canadensis*—Almost extinct a few years ago, being highly prized for its fur; since it has been under protection, however, it is again becoming abundant in northern Ontario. An expert builder of dams. Using the four-foot sticks from which it has eaten the bark for

food, and an abundance of mud, it will raise a strong dam, four feet high and ten feet or more wide on the ground. The mud used is dug from the bottom and sides of the beaver-pond. The Beaver's feet are comparatively small for so large a swimming animal, but the flattened tail makes up for whatever motive power is lost through the smallness of the feet. The Beaver makes its home in burrows in the banks, or far out into the pond, using for the purpose strong reeds or small sticks and mud. In every case the entrance to the burrow is below water and is entered by diving. If the Beaver can secure sufficient wood of kinds to its liking it will eat little else. Owing to its habit of working by night it is rarely seen.

703—POCKET, OR KANGAROO, RAT—*Dipodomys spectabilis*—Inhabits the United States from Iowa westward and southward, even into the desert regions of Arizona. Has long, silky hair. In each cheek is a hair-lined pocket, which is used for storage of food while the animal is on foraging expeditions, or as receptacles for dirt when it is digging.

704—CANADA PORCUPINE—*Erethizon dorsalis*—Formerly common and generally distributed; now only found in the unsettled parts of northern Ontario. Subsists on the tender bark, twigs and buds of trees. The Porcupine will sometimes strike a heavy blow with its tail, thereby driving its quills deeply into the flesh of an antagonist. It has not, however, as is sometimes supposed, the power to eject its quills. In appearance it is similar to the European Hedgehog, but quite different in habits. A good climber.

705—AMERICAN OTTER—*Lutra canadensis*—Persecuted almost to extinction because of its value as a fur-bearing animal. Owing to proper protection now, however, its numbers are increasing. Formerly inhabited almost all of North America north of Mexico, but now restricted to parts of the southern United States, where its fur is short, rather coarse and "off color," and to the lakes and rivers of the unsettled districts of northern Canada. A carnivorous animal, living upon fish, frogs, crabs, young birds, small mammals, etc. The Otter is very playful, and indulges, for an hour at a time, in the pastime of sliding down hill over a wet and muddy slide, with a water plunge at the bottom.

706—POLAR BEAR—*Ursus maritimus*—Inhabits practically the whole of the Arctic Ocean and its numerous islands, though it is not the most northerly of warm-blooded mammals. On the coast of Alaska it will plunge into the Arctic and swim miles from shore, through tossing fields of broken ice. Seldom goes more than a day's journey inland on any shore. Its heavy coat of thick fur gives the Polar Bear an appearance of great size, though in reality it is not much heavier than the Black Bear.

707—RACCOON—*Procyon lotor*—Common and generally distributed, where sufficient bush is left to afford shelter for it, in Canada and the United States. By day usually sleeps high up in some hollow tree, or in the crotch of a limb. By night it prowls about in search of food, or gambols in some marshy place. Feeds upon almost anything; particularly fond of green corn and garden crops in summer.

708—STRIPED HYENA—*Hyaena striatus*—Found in Africa, India, Persia and Asia Minor. Nocturnal in its habits, preferring by day the gloom of caves, ruins, or burrows. Comes out at sunset to make the night hideous with its unearthly howling, which, when the animal becomes excited, changes into a sort of demoniac laughter. Feeds on any animals it is able to catch, on refuse of towns, and even on the bodies of the dead.

709—**ATLANTIC WALRUS**—*Trichechus rosmarus*—Has as its habitat the Arctic regions between America and Europe. Grows to a great size. Feeds on any animal matter it can catch in the open sea, or dig up in shallow water. Hunted for the ivory of its tusks, which, however, is inferior in quality to that the Elephant, and for the oil obtained from the thick layers of fat found close under the skin; the hide also is valuable commercially. The Walrus furnishes the staple food of the Eskimos.

710—**SKUNK**—*Mephitis mephitis*. See 224.

711—**BLACK BEAR**—*Ursus americanus*—Formerly abundant and generally distributed throughout North America; but now restricted to the unsettled districts. Feeds upon small animals, berries and succulent herbage; also fond of honey.

712—**MINK**—*Mustela vison*. See 225.

713—**BLACK-FOOTED FERRET**—*Putorius nigripes*—Related to and similar in habits to the Weasel. Has obtained the nickname of "Prairie Dog Hunter." Range—Great plains from western North Dakota and northern Montana to Texas. Not known west of eastern base of the Rocky Mountains.

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